

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS DESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

Notebook Computer

Name and address of the applicant
Nom et adresse du demandeur

Compal Electronics, Inc.
No. 581, Ruiguang Rd., Neihu District
Taipei City 11492
Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

Compal Electronics, Inc.
No. 581, Ruiguang Rd., Neihu District
Taipei City 11492
Taiwan

Name and address of the factory
Nom et adresse de l'usine

Note: When more than one factory, please report on page 2
Note: Lorsque il y a plus d'une usine, veuillez utiliser la deuxième page

☒ Additional information on page 2

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

3.42A 19Vdc for AQ00 and AQ02;
4.74A 19Vdc for AQ01
Cl. III

Trademark (if any)
Marque de fabrique (si elle existe)



Type of Manufacturer's Testing Laboratories used
Type de programme du laboratoire d'essais constructeur
Model / Type Ref.
Ref. De type

AQ00; AQ01; AQ02

Additional information (if necessary may also be reported on page 2)
Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page)

☐ Additional information on page 2

A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

IEC 60950-1(ed.2)

As shown in the Test Report Ref. No. which forms part of this Certificate
Comme indiqué dans le Rapport de tests numéro de référence qui constitue partie de ce Certificat

188800

This CB Test Certificate is issued by the National Certification Body
Ce Certificat de test OC est établi par l'Organisme **National de Certification**



Gaustadalléen 30
NO-0373 Oslo, Norway

Hanne Yndestad

Date: 02-11-2011

Signature: Hanne Yndestad
Certification Department

Compal Electronics Technology (Kunshan) Co., Ltd.
No. 25, Third Avenue, A Zone, Kunshan Comprehensive
Free Trade Zone, Kunshan, Jiangsu
China

Compal Information Technology (Kunshan) Co., Ltd.
No.58, First Avenue, A Zone, Kunshan Comprehensive
Free Trade Zone, Kunshan, Jiangsu
China

Compal (Vietnam) Co., Ltd.
Ba Thien Industrial Zone, Ba Hien Commune
Binh Xuyen County, Vinh Phuc Province
Viet Nam

Compal Electronics (Chongqing) Co., Ltd.
No. D01, Zone D, Air Port Section of LiangLu CunTan
Free Trade Port Area, YuBei District, Chongqing
China

Compal Information (Kunshan) Co. Ltd.
No. 15, Third Avenue, A Zone, Kunshan Comprehensive
Free Trade Zone, Kunshan, Jiangsu
China

COMPALEAD ELETRÔNICA DO BRASIL INDÚSTRIA E
COMÉRCIO LTDA.
RUA KANEBO 175, GALPÕES C1, C2, C3, C4, C5 C6 E
C12, BAIRRO DISTRITO INDUSTRIAL JUNDIAÍ
BUSINESS PARK, CEP 13213-090, JUNDIAÍ, SÃO
PAULO
Brazil

Compal Electronics (Chengdu) Co., Ltd.
No. 88, Sec.1, ZongBao Avenue, Chengdu Hi-tech
Comprehensive Bonded Zone (Shuangliu), Shuangliu
County, Chengdu City, SiChuan
China

Compal Digital Technology (Kunshan) Co., Ltd.
No.9, Second Avenue, A Zone, Kunshan Comprehensive
Free Trade Zone, Kunshan, Jiangsu
China

Additional information(if necessary)
Information complémentaire (si nécessaire)



Gaustadalléen 30
NO-0373 Oslo, Norway

Date: 02-11-2011

Hanne Yndestad

Signature: Hanne Yndestad
Certification Department




Test Report issued under the responsibility of



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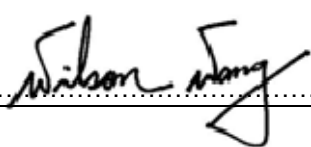
TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Reference No.	188800
Date of issue	November 01, 2011
Total number of pages	61 pages and refer to list of attachments on page 6 and 7
CB Testing Laboratory Name :	Nemko Taiwan
Address	5Fl., No. 409, Section 2, Tiding Blvd., Neihu, Taipei 114, Taiwan
Applicant's name	Compal Electronics, Inc.
Address	No. 581, Ruiguang Rd., Neihu District, Taipei City 11492, Taiwan
Manufacturer's name	Compal Electronics, Inc.
Address	No. 581, Ruiguang Rd., Neihu District, Taipei City 11492, Taiwan
Factory's name	See name and address of production-sites (Factories)
Address	See name and address of production-sites (Factories)
Test specification:	
Standard	IEC 60950-1:2005 (2nd Edition)
Test procedure	CB
Non-standard test method	N/A
Test Report Form No.	IEC60950_1A
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2009-09
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This Test Report , when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description	Notebook Computer
Trade Mark	 COMPAL
Manufacturer	See page 1
Model/Type reference	AQ00; AQ01; AQ02
Ratings	3.42A 19Vdc for AQ00 and AQ02; 4.74A 19Vdc for AQ01

Name and address of production-sites (Factories):

1. Compal Information (Kunshan) Co. Ltd.
No.15, Third Avenue, A Zone, Kunshan Comprehensive Free Trade Zone, Kunshan, Jiangsu, China
2. Compal Electronics Technology (Kunshan) Co., Ltd.
No.25, Third Avenue, A Zone, Kunshan Comprehensive Free Trade Zone, Kunshan, Jiangsu, China
3. Compal Information Technology (Kunshan) Co., Ltd.
No.58, First Avenue, A Zone, Kunshan Comprehensive Free Trade Zone, Kunshan, Jiangsu, China
4. COMPALEAD ELETRÔNICA DO BRASIL INDÚSTRIA E COMÉRCIO LTDA.
RUA KANEBO 175, GALPÕES C1, C2, C3, C4, C5 C6 E C12, BAIRRO DISTRITO INDUSTRIAL
JUNDIAÍ BUSINESS PARK, CEP 13213-090, JUNDIAÍ, SÃO PAULO
BRASIL
5. Compal (Vietnam) Co., Ltd.
Ba Thien Industrial Zone, Ba Hien Commune, Binh Xuyen County, Vinh Phuc Province, Vietnam
6. Compal Electronics (Chengdu) Co., Ltd.
No. 88, Sec.1, ZongBao Avenue Chengdu Hi-tech Comprehensive Bonded Zone (Shuangliu),
Shuangliu County, Chengdu City, SiChuan, China
7. Compal Electronics (Chongqing) Co., Ltd.
No. D01, Zone D, Air Port Section of LiangLu CunTan Free Trade Port Area, YuBei District,
Chongqing
China
8. Compal Digital Technology (Kunshan) Co., Ltd.
No.9, Second Avenue, A Zone, Kunshan Comprehensive Free Trade Zone, Kunshan, Jiangsu, China

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory: Testing location/ address : <input type="checkbox"/> Associated CB Laboratory: Testing location/ address : Tested by (name + signature)..... : Approved by (+ signature) :	Nemko Taiwan 5Fl., No. 409, Section 2, Tiding Blvd., Neihu, Taipei 114, TAIWAN Ralph Lai Wilson Wang  
<input type="checkbox"/> Testing procedure: TMP Tested by (name + signature)..... : Approved by (+ signature) : Testing location/ address :	
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature)..... : Witnessed by (+ signature) : Approved by (+ signature) : Testing location/ address :	
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature)..... : Approved by (+ signature) : Supervised by (+ signature)..... : Testing location/ address :	
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature)..... : Approved by (+ signature) : Supervised by (+ signature)..... : Testing location/ address :	

Summary of testing:	
Tests performed (name of test and test clause): 1.6 Power interface 1.7 Marking and instructions 2.5 Limited power sources 3.5 Interconnection of equipment 4.1 Stability 4.2 Mechanical Strength 4.3 Design and construction 4.5 Thermal requirement 4.6 Openings in enclosures 4.7 Resistance to fire 5.3 Abnormal operating and fault conditions Annex A TESTS FOR RESISTANCE TO HEAT AND FIRE Annex B MOTOR TESTS UNDER ABNORMAL CONDITIONS Operation condition: Refer to page 9	Testing location: See page 3
Radio and television interference suppression compliance with the EMC directive is necessary for achieving type certification. The appliance shall comply with the relevant EMC standards, depending on the equipment in question. In NO, compliance with standards for radio interference suppression is a part of Nemko's certification. In FI, DK and SE compliance is not necessary for achieving safety certification.	The EUT has not been tested for EMC and must be tested and considered before marketed into the country in which is to be sold.
1.1.2 The unit is operated under altitude up to 3,048 m (10,000ft).	This equipment is intended to be operated under altitude up to 3,048 m (10,000feet). The power adapter has been evaluated to comply with the requirement.
1.7.2.1, Note 3 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.
Summary of compliance with National Differences: The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 2nd Edition and all CENELEC members as listed in EN 60950-1: 2006 2nd Edition, A11: 2009. At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005, 2nd Edition. Therefore this test report includes national differences for IEC 60950-1: 2001 1st Edition. All national differences listed in the IEC EE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment. National Differences attached to this test report: refer to List of attachments for details.	

Copy of marking plate: "The below labels are draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval"



COMPAL

Trade mark

will show on LCD cover

List of attachments:

1. Photos (13 pages)
2. European Group Differences and National Differences (12 pages)
3. Korean differences (1 page)
4. Canadian differences (7 pages)
5. US differences (8 pages)

In addition the following national differences according to IEC 60950-1 :2001:

1. Australian differences (AS/NZS 60950.1-2003) (8 pages)
2. Singapore differences (3 pages)
3. Japan differences (12 pages)

Attachment TUV SUD CB test certificate / report (SG-OF-03726 / 081-100450-000) of battery pack, Celxpert Energy type BATCL50L61

Attachment Nemko CB test certificate / report (NO53980 / 132588) of power distribution switch, Texas Instruments type TPS2560

Attachment Nemko CB test certificate / report (NO53981 / 132588) of power distribution switch, Texas Instruments type TPS2561

Attachment Nemko CB test certificate / report (NO59537 / 156671) of power distribution switch, Texas Instruments type TPS206".

Attachment Nemko CB test certificate / report (NO50433 / 111083) of power distribution switch, Texas Instruments type TPS2062A

Attachment Nemko CB test certificate / report (NO50434 / 111083) of power distribution switch, Texas Instruments type TPS2066A

Attachment Nemko CB test certificate / report (NO60218 / 157286) of power distribution switch, Texas Instruments type TPS2540RTE.

Attachment Nemko CB test certificate / report (NO64923 / 179928) of power distribution switch, Texas Instruments type TPS2540ARTE

Attachment Nemko CB test certificate / report (NO64924 / 179928) of power distribution switch, Texas Instruments type TPS2541ARTE

Attachment Nemko CB test certificate / report (NO64925 / 179928) of power distribution switch, Texas Instruments type TPS2554DRCx

Attachment Nemko CB test certificate / report (NO64926 / 179928) of power distribution switch, Texas Instruments type TPS2555DRCx

List of attachments (continued):

Attachment Nemko CB test certificate / report (NO62498 / 168139) of power distribution switch, Diodes type AP21xyz

Attachment Nemko CB test certificate / report (NO54313 / 136250) of power distribution switch, Diodes type AP2...

Attachment TUV RH CB test certificate / report (JPTUV-033220 / 11021194 001) of power distribution switch, Global Mixed-mode Technology type G525A1, G525A2, G526-1, G526-2, G528, G528A, G545A1, G545A2, G545B1, G545B2, G545C1, G545C2, G545D1, G545D2, G546A1, G546A2, G546A3, G546A4, G546B1, G546B2, G546B3, G546B4, G546C1, G546C2, for more models see test report

Attachment TUV RH CB test certificate / report (JPTUV-026740 / 11016279 001) of power distribution switch, uPI Semiconductor type uP7534yWYZ-XX

Attachment Nemko CB test certificate / report (NO53640 / 132590) of power distribution switch, Monolithic Power type MP62160D.

Attachment Nemko CB test certificate / report (NO52719/A1/M1 / 165696) of power distribution switch, ANPEC Electronics type APL3510..I-TRG

Attachment Nemko CB test certificate / report (NO62628 / 168946) of power distribution switch, Richtek Technology type RT9712.G.

Attachment Nemko CB test certificate / report (NO61778 / 164465) of power distribution switch, Richtek Technology Corp., type RT9715...

Attachment Nemko CB test certificate / report (NO61779/M1 / 169417) of power distribution switch, Richtek Technology type RT9711...

Test item particulars	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input checked="" type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	N/A
Tested for IT power systems	N/A
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating (A)	N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP20
Altitude during operation (m)	Up to 3,048m
Altitude of test laboratory (m)	Up to 2,000m
Mass of equipment (kg)	2.35kg max. Dimensions: 340 by 244 by 40 mm
Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing.....	
Date of receipt of test item	October, 2011
Date(s) of performance of tests.....	October - November, 2011
General remarks:	
<p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(See Enclosure #)" refers to additional information appended to the report.</p> <p>"(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p>	

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General product information:

The EUT is a Class III Notebook Computer. The unit will be connected to a certified AC/DC adapter, ref. list of critical components.

The unit was configured as follows: CPU (mounted on main board), memory card, HDD (optional), SSD (optional, SDD as an alternative part used with HDD), LCD panel (with LED back-light module), RTC battery, battery pack and DC fans.

The EUT has following optional data ports: USB2.0, USB, 3.0, IEEE 1394, eSATA, HDMI, SIM card, smart card, RJ45, audio-in, audio-out, VGA, express card and SD card ports. Refer to below table for details.

All models are similar except following differences:

Model	Input rating	Graphic chip on main board	USB / eSATA ports *)	IEEE 1394 port *)	RS232 port *)
AQ00	3.42A 19Vdc	N/A (UMA type)	USB2.0 x4, eSATA x1	Optional	Optional
AQ01	4.74A 19Vdc	Provided (discrete type)	USB2.0 x4, eSATA x1	Optional	Optional
			USB2.0 x3, USB3.0 x1, eSATA x1	N/A	N/A
AQ02	3.42A 19Vdc	N/A (UMA type)	USB2.0 x3, USB3.0 x1, eSATA x1	N/A	N/A

*) Refer also to photos for details.

Operation condition:

The unit is running white pattern on LCD display and adjustment of brightness is set to maximum. Sending/receiving data to all I/O port (including HDD or SSD). For USB2.0 and eSATA ports, each loaded to 0.5A; for USB3.0 ports, each loaded to 0.9A. Speakers is at max. volume. The empty battery pack is charging at the same time.

Unless otherwise states, tests were performed on model AQ01 which installed main board with graphic chip, conducted with AC/DC adapter Delta Electronics type ADP-90CD BB and Sanyo Energy (Taiwan) battery pack type BATHL90L9.

Circuit characteristics: The equipment contains secondary (SELV) circuits.

Maximum recommended ambient (Tmra): 35°C

1.1.2 - Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

This equipment is intended to operate in a "normal" environment (Offices and homes).

Electromedical equipment connected to the patient:

This equipment is not an electromedical equipment intended to be physically connected to a patient.


Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:


This equipment is intended to be operated under altitude up to 3,048 m (10,000 feet), so the required clearance is multiplied by the altitude correction factor (1.15, linear interpolation used), specified in table A.2 of IEC 60664-1, 1992+A1: 2000.

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	No isolating transformer in the equipment.	N/A
1.5.5	Interconnecting cables	No interconnecting cables.	N/A
1.5.6	Capacitors bridging insulation	No primary circuit.	N/A
1.5.7	Resistors bridging insulation	No such resistor used.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	The equipment is regarded as Class III.	N/A
1.5.9	Surge suppressors	No such component used.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		P
1.6.1	AC power distribution systems	The equipment is regarded as Class III.	—
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment.	N/A
1.6.4	Neutral conductor	The equipment is regarded as Class III.	N/A
1.7	Marking and instructions		P
1.7.1	Power rating	The required marking is located on the outside surface of the equipment.	P
	Rated voltage(s) or voltage range(s) (V)	19Vdc	—
	Symbol for nature of supply, for d.c. only	IEC 60417-1, symbol No. 5031, is used.	P
	Rated frequency or rated frequency range (Hz)	DC supplied.	—
	Rated current (mA or A)	1) 3.42A 2) 4.74A	—
	Manufacturer's name or trade-mark or identification mark		—
	Model identification or type reference	1) AQ00; AQ02 2) AQ01	—
	Symbol for Class II equipment only	The equipment is regarded as Class III.	N/A
	Other markings and symbols	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	The user's manual contains information for operation, installation, servicing, transport, storage, recycling and technical data. The operation guide is provided to the user. No other special installation instruction required as the equipment is class III.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	General	Refer to below:	P
1.7.2.2	Disconnect devices	Class III equipment.	N/A
1.7.2.3	Overcurrent protective device	Class III equipment.	N/A
1.7.2.4	IT power distribution systems	Class III equipment.	N/A
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone	The equipment not containing Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions		—
1.7.5	Power outlets on the equipment	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Class III equipment.	N/A
1.7.7	Wiring terminals	Class III equipment.	N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	Refer below:	—
1.7.8.1	Identification, location and marking	The function of controls affecting safety is obvious without knowledge of language etc.	P
1.7.8.2	Colours	For functional indication a LED lights when the equipment is operating.	P
1.7.8.3	Symbols according to IEC 60417	The functional switch is marked  complies with IEC-60417-5009.	P
1.7.8.4	Markings using figures	No controls affecting safety.	N/A
1.7.9	Isolation of multiple power sources	Class III equipment.	N/A
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.12	Removable parts	No marking is placed on removable parts.	P
1.7.13	Replaceable batteries	1) The real-time clock lithium battery (RTC) is not placed at operator access area. 2) The Li-ion battery cells in the battery pack are not user replaceable. Required warning is provide in the service manual and user's manual.	P
	Language(s)	English	—
1.7.14	Equipment for restricted access locations	Equipment not intended for installation in RAL.	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Refer below:	P
2.1.1.1	Access to energized parts	Energized parts are not accessible.	P
	Test by inspection	Complies.	P
	Test with test finger (Figure 2A)	Complies.	P
	Test with test pin (Figure 2B)	Complies.	P
	Test with test probe (Figure 2C)	No TNV circuits.	N/A
2.1.1.2	Battery compartments	No TNV circuits.	N/A
2.1.1.3	Access to ELV wiring	Class III equipment.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	Class III equipment.	N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III equipment.	N/A
	Measured voltage (V); time-constant (s).....		—
2.1.1.8	Energy hazards – d.c. mains supply	The equipment is not connected to d.c. mains supply.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Capacitor connected to the d.c. mains supply ...:		—
	b) Internal battery connected to the d.c. mains supply		—
2.1.1.9	Audio amplifiers	The accessible audio-out circuit (earphone/microphone jack) complies with 2.1.1.1.	P
2.1.2	Protection in service access areas	Checked by inspection, unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A
2.2	SELV circuits		P
2.2.1	General requirements	SELV limits are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V)	Within SELV limits.	P
2.2.3	Voltages under fault conditions (V)	Within SELV limits.	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV circuits.	P
2.3	TNV circuits		N/A
2.3.1	Limits	2.3.1 – 2.3.5: No TNV circuits	N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		—
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.4	Limited current circuits		N/A
2.4.1	General requirements	No limited current circuit.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz).....:		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μ F)		N/A
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		P
	a) Inherently limited output	- Audio-in, audio-out, RJ45 and IEEE 1394 ports are inherently limited, only for signal transmission. - SD card, SIM card, smart card and express card ports are inherently limited, it can only insert the storage cards and covered by fire enclosure when such cards insert to the port. - HDMI and VGA ports are inherently limited, it normally connect to accessory which provide fire enclosure.	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	All USB and eSATA ports are limited by power distribution switch. (refer to appended table 2.5).	P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	(refer to appended table 2.5).	P
	Current rating of overcurrent protective device (A) ..	No such parts used.	N/A
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	2.6.1 – 2.6.5.8: Class III equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG		N/A
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)		N/A
2.6.3.5	Colour of insulation.....		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		—
	Rated current (A), type, nominal thread diameter (mm)		N/A
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	Overcurrent and earth fault protection in primary circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Basic requirements	2.7.1 - 2.7.6: Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel.....		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles	2.8.1 – 2.8.8: No safety interlock provided.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm)		—
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		N/A
2.9.1	Properties of insulating materials	2.9.1 – 2.9.4: Class III equipment and equipment containing SELV voltage, only functional insulation is required, refer to 5.3.4.	N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C)		—
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Method(s) used		—
2.10	Clearances, creepage distances and distances through insulation		N/A
2.10.1	General	2.10.1 – 2.10.10 Class III equipment and equipment containing SELV voltage, only functional insulation is required, refer to 5.3.4.	N/A
2.10.1.1	Frequency		N/A
2.10.1.2	Pollution degrees		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply		—
	b) Earthed d.c. mains supplies		—
	c) Unearthed d.c. mains supplies		—
	d) Battery operation		—
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		N/A
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		N/A
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		N/A
	Routine test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different surfaces of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No electric screw connection.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	N/A
3.1.8	Self-tapping and spaced thread screws	No such screws used in equipment.	N/A
3.1.9	Termination of conductors	No such device used in equipment.	N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	No sleeves.	N/A
3.2	Connection to a mains supply		N/A
3.2.1	Means of connection	3.2.1-3.2.9: Class III equipment, not connected to the mains.	—
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) :		—
	Longitudinal displacement (mm) :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space		N/A
3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	3.3.1 – 3.3.8; Class III equipment, not connected to the mains.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement	3.4.1 – 3.4.11 Class III equipment, not connected to the mains.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		P
3.5.1	General requirements	Considered.	P
3.5.2	Types of interconnection circuits	Interconnection for SELV circuit only.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A
3.5.4	Data ports for additional equipment	Refer to 2.5 for details.	P
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	< 7kg	N/A
	Test force (N)	The unit is not floor-standing.	N/A
4.2	Mechanical strength		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
4.2.2	Steady force test, 10 N	No such parts.	N/A
4.2.3	Steady force test, 30 N	No internal enclosure.	N/A
4.2.4	Steady force test, 250 N	No hazard. The test is performed at all sides of enclosure.	P
4.2.5	Impact test	Refer below:	—
	Fall test	Impact test not applicable, refer cl. 4.2.6.	N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)	Transportable equipment: No damage after 1m drop.	P
4.2.7	Stress relief test	Test is carried out at 70°C / 7h. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified		—
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Not intended to be mounted on a wall or ceiling.	N/A
4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)	No such parts.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320-1 or IEC 60083.	P
4.3.6	Direct plug-in equipment	Class III equipment.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	Certified battery pack and RTC battery used. Also test in appended table 4.3.8, 5.3.	P
	- Overcharging of a rechargeable battery	For battery pack, test in appended table 5.3. For RTC battery, test in table 4.3.8.	P
	- Unintentional charging of a non-rechargeable battery	No such battery.	N/A
	- Reverse charging of a rechargeable battery	Special shape connector provided for prevent reverse polarity or reverse charging.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Excessive discharging rate for any battery	Certified battery pack and RTC battery used. Also test in appended table 4.3.8, 5.3.	P
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	P
4.3.10	Dust, powders, liquids and gases	The batteries are considered not to contain flammable liquids or gases. In the CPU heat pipe contained a very small amount liquid that is no risk of leakage under normal and abnormal operation condition.	P
4.3.11	Containers for liquids or gases	See above.	P
4.3.12	Flammable liquids	The liquid is not flammable. It is only water and negligible secret corrosion inhibitors inside of heat pipe.	N/A
	Quantity of liquid (l)		—
	Flash point (°C)		—
4.3.13	Radiation	Refer to below:	P
4.3.13.1	General	Refer to below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification		—
4.3.13.4	Human exposure to ultraviolet (UV) radiation	The equipment does not produce significant UV radiation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5	Laser (including LEDs)	The optical drive device are tested according to EN 60825-1. See List of Critical Components for additional information. The laser warning text is shown in each source of laser component. LEDs are diffusive type.	P
	Laser class	1	—
4.3.13.6	Other types	The equipment does not generate other types of radiation.	N/A
4.4	Protection against hazardous moving parts		P
4.4.1	General	Adequate protection against risk of personal injury.	P
4.4.2	Protection in operator access areas	No risk of personal injury from moving parts.	P
4.4.3	Protection in restricted access locations	Not intended for installation in RAL.	N/A
4.4.4	Protection in service access areas	Unintentional contact is not likely in service access areas.	P
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	No thermoplastic parts carrying hazardous voltages.	N/A
4.6	Openings in enclosures		P
4.6.1	Top and side openings	Transportable equipment.	N/A
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	Transportable equipment.	N/A
	Construction of the bottommm, dimensions (mm) ...		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.6.3	Doors or covers in fire enclosures	The door or cover is intended for occasional use. Equipment instructions include directions.	P
4.6.4	Openings in transportable equipment	keyboard side: <u>Speaker:</u> numerous of round openings, 0.5mm in diameter for each opening. Left side: <u>Vents (H/S inside):</u> numerous of triangle openings, cover area 75.5 x 18.0mm, max. 14.5 x 8.5mm for each opening (internal baffled by H/S, 1.0mm width for each fin gap) Right side: <u>Security lock:</u> a slot opening, 7.0 x 3.0mm (internal baffled by min. V-1 material) Bottom side: <u>Vents:</u> numerous of irregular openings, cover area 62.5 x 51.5mm, max. 7.2 x 1.0mm for each opening (under DC fan) <u>Vents:</u> numerous of irregular openings, cover area 94.5 x 71.5mm, max. 7.2 x 1.0mm for each opening (under heat pipe)	P
4.6.4.1	Constructional design measures		—
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks).....		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Refer below:	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure	The fire enclosure is required to cover all parts.	N/A
4.7.3	Materials	See below:	P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1 and Annex A.2.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is V-0 min. and glass (LCD panel). Glass complied with Annex A.2.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside the fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N/A
5.1.1	General	5.1.1 – 5.1.7 Class III equipment and without TNV nor cable distribution system.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		—
	Supply voltage (V)		—
	Measured touch current (mA)		N/A
	Max. allowed touch current (mA)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)...		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		—
5.1.7.2	Simultaneous multiple connections to the supply		—
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to telecommunication networks nor cable distribution systems	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	Electric strength		N/A
5.2.1	General	5.2.1 – 5.2.2: Class III equipment and without TNV nor cable distribution system.	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3).	P
5.3.2	Motors	Motors in certified HDD and DC fan. For DC fan ADDA type AD0705MX-HD3, complied with Annex B test) No excessive temperatures occur when fan motor is stalled.	P
5.3.3	Transformers	No isolating transformer in the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.3.4	Functional insulation.....:	Complies with c).	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE	(see appended table 5.3).	P
5.3.7	Simulation of faults	(see appended table 5.3).	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	Refer to below:	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.2	After the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages	6.1.1 – 6.1.2.2: No TNV circuits.	N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements	6.2.1 – 6.2.2.3: No TNV circuits.	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	Protection of the telecommunication wiring system from overheating		N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Max. output current (A)	Not applicable.	—
	Current limiting method	Not applicable.	—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General	7.1 – 7.4.3: Not connected to cable distribution systems.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		P
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	Equipment mass <18kg.	N/A
A.1.1	Samples.....		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		—
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)	All materials have suitable flame class. Glass of LCD panel is complied with A.2 test, see below:	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.2.1	Samples, material.....:	Glass of LCD panel: Type: various; glass.	—
	Wall thickness (mm).....:	Glass of LCD panel: Min. 0.34mm thick.	—
A.2.2	Conditioning of samples; temperature (°C)	70°C, for 7 days (168 h)	—
A.2.3	Mounting of samples	Samples are mounted vertically.	—
A.2.4	Test flame (see IEC 60695-11-4)	The test flame according to IEC 60695-11-4 is used.	P
	Flame A, B or C	Flame A used.	P
A.2.5	Test procedure	Considered	P
A.2.6	Compliance criteria	Complied.	P
	Sample 1 burning time (s).....:	The sample was not flammable and surgical cotton was not ignited.	—
	Sample 2 burning time (s).....:	The sample was not flammable and surgical cotton was not ignited.	—
	Sample 3 burning time (s).....:	The sample was not flammable and surgical cotton was not ignited.	—
A.2.7	Alternative test acc. To IEC 60695-11-5, cl. 5 and 9	Not used.	N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements	Motors in certified HDD and DC fan. For DC fan ADDA type AD0705MX-HD3, refer to test in appended table 5.3).	P
	Position	(refer to appended table 1.5.1)	—
	Manufacturer	(refer to appended table 1.5.1)	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Type	(refer to appended table 1.5.1)	—
	Rated values	(refer to appended table 1.5.1)	—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	Refer to below:	P
B.7.1	General	Considered.	P
B.7.2	Test procedure	(refer to table 5.3)	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position	No transformer in the equipment.	—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection.....		—
C.1	Overload test		—
C.2	Insulation		—
	Protection from displacement of windings		—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		N/A
D.1	Measuring instrument	Class III equipment, without TNV nor cable distribution system.	N/A
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		P
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories		N/A
	b) Maximum continuous voltage		N/A
	c) Pulse current		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.12)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—

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1.5.1	TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
AC/DC adapter 1)	Asian Power Devices	DA-65C19	I/P: 1.6A, 100-240V, 50-60Hz, Cl.I O/P: 3.42A 19Vdc	IEC 60950-1:2005 +A1 UL 60950-1	TUV RH CB (JPTUV-037800) UL	
	Delta Electronics	ADP-65JH BB	I/P: 1.5A, 100-240V, 50-60Hz, Cl.I O/P: 3.42A 19Vdc	IEC 60950-1:2005 UL 60950-1	TUV RH CB (JPTUV-028160-M1) UL	
	Asian Power Devices	NB-90B19	I/P: 1.5A, 100-240V, 50-60Hz, Cl.I O/P: 4.74A 19Vdc	IEC 60950-1(ed.2) UL 60950-1	N CB (NO46956) UL	
	Delta Electronics	ADP-90CD BB	I/P: 1.5A, 100-240V, 50-60Hz, Cl.I O/P: 4.74A 19Vdc	IEC 60950-1:2005 UL 60950-1	TUV RH CB (JPTUV-028022-M1) UL	
Plastic enclosure	MITSUBISHI ENGINEERING-PLASTICS	TMB1615	V-0, min. 1.0mm thickness	UL 94	UL	
	MITSUBISHI ENGINEERING-PLASTICS	MB8800	V-0, min. 1.5mm thickness	UL 94	UL	
	BAYER MATERIAL SCIENCE	FR3002	V-0, min. 1.0mm thickness	UL 94	UL	
	GINAR TECHNOLOGY	D231 3C01	V-0, min. 1.0mm thickness	UL 94	UL	
	GINAR TECHNOLOGY	D200 2C05	V-0, min. 1.2mm thickness	UL 94	UL	
LCD panel	Various	Various	14", glass type, min. 0.34 mm thick (with LED back-light module)		Tested in the equipment	

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
HDD (optional)	Seagate or equivalent	ST9 or 2.5 Series or ST with additional suffixes or equivalent	5Vdc, 1.5A max. 5Vdc, 1.5A max.	IEC 60950-1:2005 UL 60950-1	UL CB (US/14823/UL) UL Verified by Nemko or other certificate body, UL
SSD (optional, as an alternative part used with HDD)	Micron or equivalent	RealSSD X300 (X may be any letter A-Z representing differences in software and is non safety relevant) or equivalent	5Vdc/3.3Vdc, 2.0A max. 5Vdc/3.3Vdc, 2.0A max.	EN 60950-1, UL 60950-1	TUV, UL Verified by Nemko or other certificate body, UL
ODD (optional)	Hewlett-Packard Company or equivalent	HP BD-5730Hxxx (x=0-9, A-Z, "-" or blank) or equivalent	5Vdc, 2.0A max.; V-1 min. for bezel; Laser class 1 product 5Vdc, 2.0A max.; V-1 min. for bezel; Laser class 1 product	EN 60950-1, EN 60825-1 UL 60950-1	TUV RH, UL Verified by Nemko or other certificate body
DC fan	ADDA PCB Fan blade Housing Wire	AD0705MX-HD3 Various Various Various Various	5Vdc, 0.3A max., 8.2CFM min. Min. V-1 Min. V-1 Min. V-1 Min. VW-1	 UL 94 UL 94 UL 94 UL 94	Tested in the equipment (refer to annex B and appended table 5.3) UL UL UL UL
DC fan (alternative)	Various	Various	5Vdc, 0.3A max., 8.2CFM min.	EN 60950-1:2006+A11 UL 507	Verified by Nemko or other certificate body, UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
RTC battery (Lithium)	Hitachi Maxell	ML1220	12Vdc, max. abnormal charging current is 100mA	UL 1642	UL
	FDK	ML1220	12Vdc, max. abnormal charging current is 300mA		UL
	Panasonic	ML1220	12Vdc, max. abnormal charging current is 300mA		UL
	Varta	ML1220	5Vdc, max. abnormal charging current is 300mA		UL
Li-ion battery pack	Sanyo Energy (Taiwan)	BATHL91L6	10.8Vdc, 4300mAh, 47Wh	EN 60950-1/A11:2009 UL 60950-1	TUV SUD UL
	Celxpert Energy	BATCL50L61	11.1Vdc, 4400mAh, 49Wh	IEC 60950-1:2005 UL 60950-1	TUV SUD CB (SG-OF-03726) UL
	Sanyo Energy (Taiwan)	BATHL90L6	11.1Vdc, 5200mAh, 57.72Wh	EN 60950-1/A11:2009 UL 60950-1	TUV SUD UL
	Sanyo Energy (Taiwan)	BATHL90L9	11.1Vdc, 7800mAh, 86.58Wh	EN 60950-1/A11:2009 UL 60950-1	TUV SUD UL
Speakers (two provided) (optional)	Various	Various	4Ω min., 3W max.	--	Tested in the equipment
PCB	Various	Various	V-0 min., 105°C min.	UL 796	UL

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object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Power distribution switch (USB port protector)	Texas Instruments	TPS2560	2.5A per channel, 2.5-6.5Vdc, SELV	IEC 60950-1(ed.2)	N CB (NO53980)
	Texas Instruments	TPS2561	2.5A per channel, 2.5-6.5Vdc, SELV	IEC 60950-1(ed.2)	N CB (NO53981)
	Texas Instruments	TPS206". (The dot "." in the model name represents a single digit numeric character 1, 2, 3, 5, 6 or 7. Additional alphabetic characters representing device package options may follow the model number)	1A per output channel 2.7-5.5Vdc SELV, Cl.III	IEC 60950-1(ed.2);am1	N CB (NO59537)
	Texas Instruments	TPS2062A	2.7-5.5Vdc, SELV, Cl. III	IEC 60950-1(ed.2)	N CB (NO50433)
	Texas Instruments	TPS2066A	2.7-5.5Vdc, SELV, Cl. III	IEC 60950-1(ed.2)	N CB (NO50434)
	Texas Instruments	TPS2540RTE. (The "." indicated in the model designation represents any alphanumeric character identifying minor differences in non-safety affecting operation and configuration differences)	2.7A max. 4.5-5.5Vdc, Cl.III, SELV	IEC 60950-1(ed.2); am1	N CB (NO60218)

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object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Power distribution switch (USB port protector)	Texas Instruments	TPS2540ARTE _x (The "x" indicated in the model designation represents any alphanumeric character identifying only the product packaging options, such as part quantity per reel)	2.7A max. 4.5-5.5Vdc, Cl.III, SELV	IEC 60950-1 (ed.2); am1	N CB (NO64923)
	Texas Instruments	TPS2541ARTE _x (The "x" indicated in the model designation represents any alphanumeric character identifying only the product packaging options, such as part quantity per reel)	2.7A max. 4.5-5.5Vdc, Cl.III, SELV	IEC 60950-1 (ed.2); am1	N CB (NO64924)
	Texas Instruments	TPS2554DRC _x (The "x" indicated in the model designation represents any alphanumeric character identifying only the product packaging options, such as part quantity per reel)	2.7A max. 4.5-5.5Vdc, Cl.III, SELV	IEC 60950-1 (ed.2); am1	N CB (NO64925)
	Texas Instruments	TPS2555DRC _x (The "x" indicated in the model designation represents any alphanumeric character identifying only the product packaging options, such as part quantity per reel)	2.7A max. 4.5-5.5Vdc, Cl.III, SELV	IEC 60950-1 (ed.2); am1	N CB (NO64926)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Power distribution switch (USB port protector)	Diodes	AP21xyz (The "x" in the model name can be any number from 4 to 9 (denoting active low or active high enable pin). "y" can be 1, 2, 5 or 6 (denoting channel switch type). "z" can be single or multiple alphanumeric characters, not affecting safety)	2.7-5.5Vdc, Cl. III	IEC 60950-1(ed.2); am1	N CB (NO62498)
	Diodes	AP2... (The symbols "..." in the model number represents alphanumeric characters (up to six alphanumeric characters) that may indicate device package options and minor non-safety critical variations of the device. Additional alphanumeric characters representing device package options may follow model number also representing minor non-safety critical variations in the device)	2.0A 2.7-5.5Vdc, SELV, Cl. III	IEC 60950-1(ed.2)	N CB (NO54313)

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object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Power distribution switch (USB port protector)	Global Mixed-mode Technology	G525A1, G525A2, G526-1, G526-2, G528, G528A, G545A1, G545A2, G545B1, G545B2, G545C1, G545C2, G545D1, G545D2, G546A1, G546A2, G546A3, G546A4, G546B1, G546B2, G546B3, G546B4, G546C1, G546C2, for more models see test report	3.0-5.5Vdc per output channel, SELV, Cl.III	IEC 60950-1:2005	TUV RH CB (JPTUV-033220)
	uPI Semiconductor	uP7534yWYZ-XX (y=A, B, C or D; WYZ=RU8, RA8 or SA8; XX=06, 10 or 15)	DC 2.7-5.5V; 1.0-1.5A max. (XX=06) or 1.8-2.7A max. (XX=10) or 2.5-3.8A max. (XX=15)	IEC 60950-1:2005	TUV RH CB (JPTUV-026740)
	Monolithic Power	MP62160D. (The dot "." in the model name can be S, D or H to represent package code)	2.8A, 2.7-5.5V, Cl.III	IEC 60950-1(ed.2)	N CB (NO53640)
	ANPEC Electronics	APL3510..I-TRG (The first dot "." in the model name be A, B, C or D to represent output current / enable function. The second dot can be K or X to represent package code)	1.0-2.0A, 2.7-5.5Vdc per output channel, Cl.III SELV	IEC 60950-1(ed.2)	N CB (NO52719/A1/M1)
	Richtek Technology	RT9712.G. (The first dot "." can be A, B, C or D represent output current / enable function. The second dot "." can be S or F represent package type)	1.0-1.5A, 2.7-5.5Vdc per output channel, Cl.III. SELV	IEC 60950-1(ed.2)	N CB (NO62628)

object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Power distribution switch (USB port protector)	Richtek Technology	RT9715... (The first dot "." can be A, B, C, D, E, F, G or H represent output current/EN function. The second dot can be P or G represent manufacture process. The third dot can be B, BG, S, F, BR or QW represent package type)	0.7-2.0A, 2.7-5.5Vdc per output channel, Cl.III. SELV	IEC 60950-1(ed.2)	N CB (NO61778)
	Richtek Technology	RT9711... (The first dot "." can be A, B, C or D represent output current/EN function. The second dot can be P or G represent manufacture process. The third dot can be B, BG, J5, S or F represent package type)	0.6-1.5A, 2.5-5.5Vdc per output channel, SELV, Cl. III	IEC 60950-1(ed.2)	N CB (NO61779/M1)
supplementary information:					
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance					
1) Those AC/DC adapters are intended to be operated under altitude up to 10,000ft (3,048m), the clearance distances complied with requirement of table A.2 of IEC 60664-1, 1992+A1: 2000. (multiplied by the altitude correction factor 1.15, linear interpolation used).					

1.5.1	TABLE: Opto Electronic Devices	N/A
Manufacturer : Type..... : Separately tested : Bridging insulation..... : External creepage distance..... : Internal creepage distance..... : Distance through insulation..... : Tested under the following conditions..... : Input..... : Output..... :		
Supplementary information:		

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1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
Test on model AQ00						
Test with AC/DC adapter Asian Power Devices type DA-65C19						
19	1.93	3.42	36.67	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	2.99	3.42	56.81	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
Test with AC/DC adapter Delta Electronics type ADP-65JH BB						
19	1.93	3.42	36.67	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	2.98	3.42	56.62	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
Test on model AQ02						
Test with AC/DC adapter Asian Power Devices type DA-65C19						
19	1.93	3.42	36.67	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	2.99	3.42	56.81	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
Test with AC/DC adapter Delta Electronics type ADP-65JH BB						
19	1.98	3.42	37.62	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	2.98	3.42	56.62	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)

U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Test on model AQ01						
Test with AC/DC adapter Asian Power Devices type NB-90B19						
19	1.92	4.74	36.48	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	4.62	4.74	87.78	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
Test with AC/DC adapter Delta Electronics type ADP-90CD BB						
19	1.92	4.74	36.48	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL91L6)
19	4.61	4.74	87.59	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL91L6)
19	1.84	4.74	34.96	--	--	Battery charging (Celxpert Energy battery pack type BATCL50L61)
19	4.62	4.74	87.78	--	--	Normal load (Celxpert Energy battery pack type BATCL50L61)
19	1.79	4.74	34.01	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L6)
19	4.62	4.74	87.78	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L6)
19	1.92	4.74	36.48	--	--	Battery charging (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
19	4.65	4.74	88.35	--	--	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)
Supplementary information:						

2.1.1.5 c1)	TABLE: max. V, A, VA test	N/A
-------------	---------------------------	-----

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Supplementary information:				

2.1.1.5 c2)	TABLE: stored energy	N/A
-------------	----------------------	-----

Capacitance C (μF)	Voltage U (V)	Energy E (J)
Supplementary information:		
$E=0,5 CU^2 \times 10^{-6}$		

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	N/A
-----	---	-----

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)	
Supplementary information:			

2.4	TABLE: Limited current circuits	N/A
-----	---------------------------------	-----

Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)
Supplementary information:				

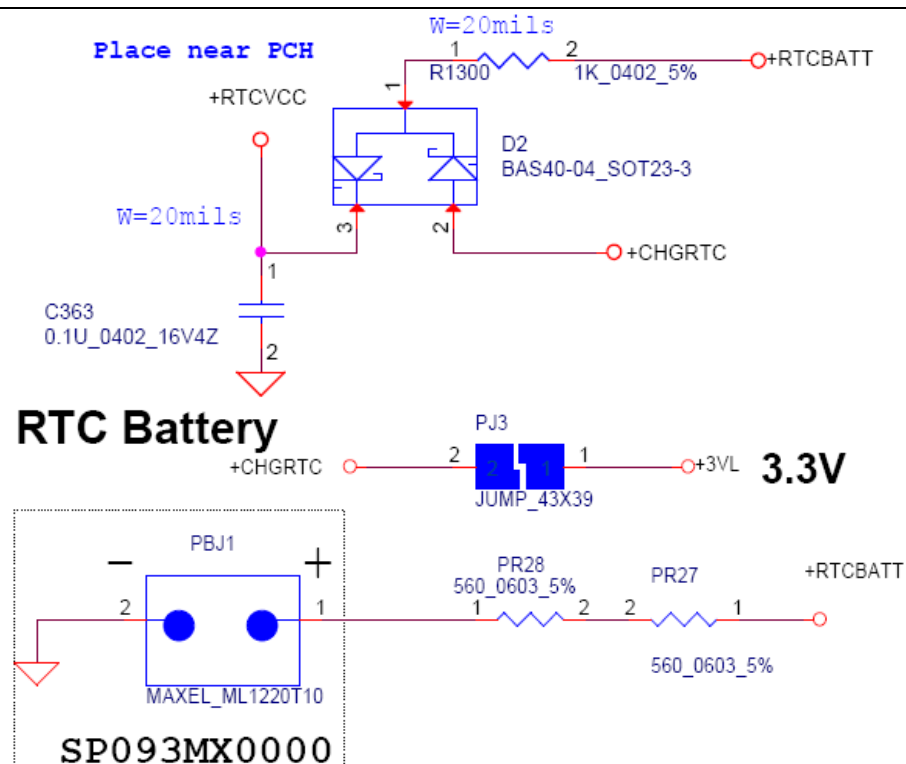
2.5	TABLE: limited power sources				P
	Uoc	I _{sc} (A)		VA	
		Meas.	Limit	Meas.	Limit
Test on model AQ01					
USB2.0 port (JUSB1) pin 1 – RTN	5.08	2.90	8.0	10.47	100
USB2.0 port (JUSB1) pin 2~4 – RTN	0	0	--	0	--
USB3.0 port (JUSB30) pin 1 – RTN	5.08	2.90	8.0	11.43	100
USB3.0 port (JUSB30) pin 2~4 – RTN	0	0	--	0	--
eSATA port (JESATA) pin 1 – RTN	5.08	2.90	8.0	11.60	100
eSATA port (JESATA) pin 2~4 – RTN	0	0	--	0	--
USB2.0 port (JP3) (1) pin 1 – RTN	5.08	3.10	8.0	10.66	100
USB2.0 port (JP3) (1) pin 2~4 – RTN	0	0	--	0	--
USB2.0 port (JP3) (2) pin 1 – RTN	5.08	3.10	8.0	10.66	100
USB2.0 port (JP3) (2) pin 2~4 – RTN	0	0	--	0	--
Supplementary information:					

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2.10.2	Table: working voltage measurement			N/A
Location		RMS voltage (V)	Peak voltage (V)	Comments
Supplementary information:				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						N/A
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Supplementary information:							

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information:						

4.3.8	TABLE: Batteries	P
<p>Battery category : The main battery packs are certified components. For RTC battery (lithium), see below.</p> <p>Manufacturer : Hitachi Maxell / FDK / Panasonic / Varta</p> <p>Type / model..... : ML1220 / ML1220 / ML1220 / ML1220</p> <p>Voltage : 12.0Vdc / 12Vdc / 12Vdc / 5Vdc</p> <p>Capacity :</p> <p>Tested and Certified by (incl. Ref. No.)..... : UL (MH12568 / MH13421 / MH12210 / MH13654)</p>		
Circuit protection diagram:		Test on model AQ01
 <p>Place near PCH</p> <p>+RTCVCC</p> <p>W=20mils</p> <p>C363 0.1U_0402_16V4Z</p> <p>R1300 1K_0402_5%</p> <p>D2 BAS40-04_SOT23-3</p> <p>+CHGRTC</p> <p>+RTCBATT</p> <p>RTC Battery</p> <p>+CHGRTC</p> <p>PJ3 JUMP_43X39</p> <p>+3VL 3.3V</p> <p>PBJ1 MAXEL_ML1220T10 SP093MX0000</p> <p>PR28 560_0603_5%</p> <p>PR27 560_0603_5%</p> <p>+RTCBATT</p>		
Max. charge current (during fault conditions)		<p>Measured current:</p> <ol style="list-style-type: none"> 1. PR28 short circuit, I = 5.1mA 2. PR27 short circuit, I = 5.1mA 3. R1300 short circuit, I = 6.5mA 4. D2 pin 1 – 2 short circuit, I = 3.1mA 5. D2 pin 1 – 3 short circuit, I = 2.8mA 6. D2 pin 2 – 3 short circuit, I = 2.8mA <p>Max. abnormal charging current limit=100mA / 300mA / 300mA / 300mA</p>

MARKINGS AND INSTRUCTIONS (1.7.2.1, 1.7.13)	
Location of replaceable battery	In service access areas
	Language(s): English
Close to the battery	No, see sub clause 1.7.13
In the servicing instructions	Yes, see sub clause 1.7.13
In the operating instructions	Yes, see sub clause 1.7.13

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available						Yes.		P	
Is it possible to install the battery in a reverse polarity position?						No.		N/A	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. Current	Manuf. Specs.		Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	1)	1)
Max. current during fault condition	--	--	--	--	--	--	--	1)	1)
1) Battery pack and RTC battery polarity can't be reversed according to the design of enclosure and connector									

Test results:		Verdict
- Chemical leaks	No chemical leaks affecting required insulation.	P
- Explosion of the battery	No explosion.	P
- Emission of flame or expulsion of molten metal	No emission of flame or expulsion of molten metal.	P
- Electric strength tests of equipment after completion of tests	Class III equipment.	N/A
Supplementary information:		

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4.5	TABLE: maximum temperatures			P
	Test on model AQ01			
	test condition:	Normal load (Sanyo Energy (Taiwan) battery pack type BATHL90L9)	Battery pack discharge (Sanyo Energy (Taiwan) battery pack type BATHL90L9)	—
maximum temperature T of part/at:		T (°C)		allowed T _{max} (°C)
CPU H/S		53.8	55.7	--
PCB near CPU		51.0	51.7	96.4
PCB near VGA		73.9	74.8	96.4
Chock (PL204)		54.5	55.4	--
RTC battery		37.6	37.4	--
HDD body		43.8	46.3	--
ODD body		39.7	41.1	--
External side of plastic enclosure, logic upper near CPU		38.8	39.5	66.4)
Inner side of plastic enclosure, logic lower near CPU		32.8	38.1	--
External side of plastic enclosure, logic lower near CPU		31.1	35.5	66.4)
Plastic enclosure of battery pack, near connector		34.3	56.4	66.4)
External side of plastic LCD cover		32.2	35.5	86.4
External side of plastic LCD bezel		35.1	37.2	86.4
Ambient		26.4°C	26.6°C	
supplementary information:				
Having a specified maximum ambient temperature of 35°C. the maximum allowed temperatures are calculated based upon a (minimum) test temperature of 26.4°C. Temp. Limit is adjusted according to cl. 1.4.12.3. If no limits stated, temperature is for reference only.				
*) Continuously held in normal use.				

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Plastic enclosure (All side except LCD cover)	MITSUBISHI ENGINEERING-PLASTICS	TMB1615	1.0	V-0	UL	
	MITSUBISHI ENGINEERING-PLASTICS	MB8800	1.5	V-0	UL	
	BAYER MATERIAL SCIENCE	FR3002	1.0	V-0	UL	
	GINAR TECHNOLOGY	D231 3C01	1.0	V-0	UL	
	GINAR TECHNOLOGY	D200 2C05	1.2	V-0	UL	
Supplementary information:						

5.1	TABLE: touch current measurement			N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests				N/A
Test voltage applied between:			Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Supplementary information:					

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)	25°C, if nothing else specified				—
	Power source for EUT: Manufacturer, model/type, output rating	Delta Electronics type ADP-90CD BB I/P: 1.5A, 100-240V, 50-60Hz, C.I. O/P: 4.74A 19Vdc				—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Test on model AQ01						
DC fan	Locked	19	1hr	--	--	Unit shutdown. Max. temp. of PCB near CPU=55.5°C, Bottom enclosure near CPU =39.5°C. Ambient=26.1°C.
Ventilation openings	Blocked	19	1hr	--	--	Unit shutdown. Max. temp. of PCB near CPU=68.1°C, Bottom enclosure near CPU =51.1°C. Ambient=27.4°C.
Charger circuit, test with Sanyo Energy (Taiwan) battery pack, type BATHL91L6						
Empty battery pack	Charge (normal)	19	7hr	--	--	Charging current=2.98A. No damaged, no hazard.
Full charged battery pack	Discharge (normal)	--	7hr	--	--	Discharge current=5.57A. No damaged, no hazard.
PQ101 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ102 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR101 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ108 pin 1 – 5	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ110 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)

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Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
PL101 pin 1 – 2	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR102 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
Charger circuit, test with Celxpert Energy battery pack, type BATCL50L61						
Empty battery pack	Charge (normal)	19	7hr	--	--	Charging current=2.98A. No damaged, no hazard.
Full charged battery pack	Discharge (normal)	--	7hr	--	--	Discharge current=5.46A No damaged, no hazard.
PQ101 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ102 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR101 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ108 pin 1 – 5	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ110 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PL101 pin 1 – 2	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR102 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)

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Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Charger circuit, test with Sanyo Energy (Taiwan) battery pack, type BATHL90L6						
Empty battery pack	Charge (normal)	19	7hr	--	--	Charging current=2.98A. No damaged, no hazard.
Full charged battery pack	Discharge (normal)	--	7hr	--	--	Discharge current=5.40A. No damaged, no hazard.
PQ101 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ102 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR101 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ108 pin 1 – 5	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ110 pin 1 – 8	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PL101 pin 1 – 2	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR102 pin 1 – 4	S-C (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)

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Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Charger circuit, test with Sanyo Energy (Taiwan) battery pack, type BATHL90L9						
Empty battery pack	Charge (normal)	19	7hr	--	--	Charging current=2.98A. No damaged, no hazard.
Full charged battery pack	Discharge (normal)	--	7hr	--	--	Discharge current=5.40A. No damaged, no hazard.
PQ101 pin 1 – 8	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ102 pin 1 – 8	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR101 pin 1 – 4	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ108 pin 1 – 5	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PQ110 pin 1 – 8	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PL101 pin 1 – 2	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)
PR102 pin 1 – 4	s-c (over charge)	19	7hr	--	--	Charge current to battery is dropped to 0A. No hazard. (test with full charged battery pack)

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Data ports						
RJ45 port pin 1~8 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
SD card port pin 1~46 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
Express card pin 1~30 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
HDMI-in port pin 1~14, 17, 19, 20 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
HDMI-in port pin 15,16 – RTN	o-l	19	20min	--	--	Max. available current is 0A (4.52V), no hazard.
HDMI-in port pin 18 – RTN	o-l	19	1hr	--	--	Max. available current is 2.20A (5.04V), no hazard.
VGA port pin 1~8, 10~12 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
VGA port pin 9 – RTN	o-l	19	1hr	--	--	Max. available current is 0A (0V), no hazard.
VGA port pin 13, 14 – RTN	o-l	19	20min	--	--	Max. available current is 0A (5.02V), no hazard.
VGA port pin 15 – RTN	o-l	19	20min	--	--	Max. available current is 0A (4.23V), no hazard.
IEEE 1394 port pin 1~6 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
Smart card pin 1~8, 10 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
Smart card pin 9 – RTN	o-l	19	20min	--	--	Max. available current is 0A (1.42V), no hazard.
IEEE 1394 pin 1~6 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
RS232 pin 1, 2, 5~9 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.
RS232 pin 3, 4 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0.54V), no hazard.
SIM card pin 1~6 – RTN	o-l	19	20min	--	--	Max. available current is 0A (0V), no hazard.

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Audio amplifiers						
Speaker (two provided)	s-c	19	20min	--	--	Unit operated normally, no damaged, no hazard.
Speaker (two provided)	o-l	19	20min	--	--	Unit operated normally, no damaged, no hazard.
Separate test						
DC fan ADDA type AD0705MX-HD3	Locked	5	7hr	--	--	Unit shutdown. Max. temp. of DC fan body =37.7°C, Ambient=27.4°C.
Supplementary information:						
s-c=short circuit, o-l=over load						

C.2	TABLE: transformers							N/A
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
Supplementary information:								

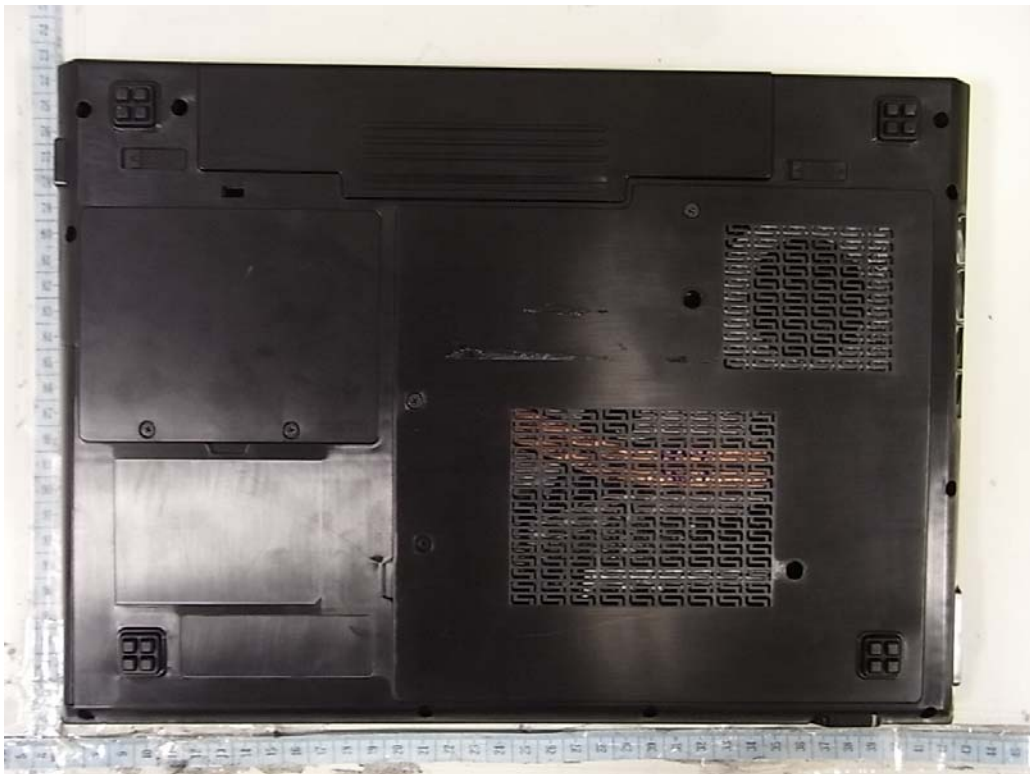
Photos

Report No. 188800

For model AQ00, AQ01, AQ02



For model AQ00, AQ01, AQ02



Photos

Report No. 188800

For model AQ00, AQ01 (right side with USB2.0 port x2)



For model AQ00, AQ01 (left side with USB2.0 port x2, eSATA port x1, IEEE 1394 x1)



Photos

Report No. 188800

For model AQ00, AQ01 (right side IEEE 1394, optional)



For model AQ00, AQ01 (rear side RS232, optional)



Photos

Report No. 188800

For model AQ01, AQ02 (right side with USB2.0 port x2)



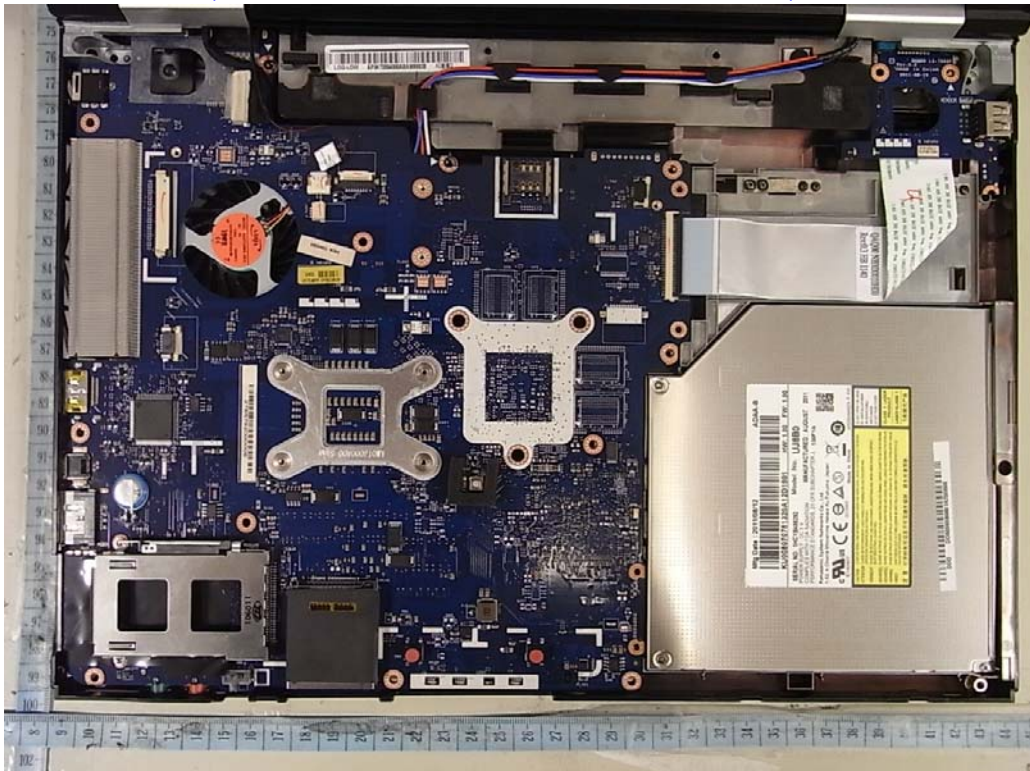
For model AQ01, AQ02 (left side with USB2.0 port x1, USB3.0 port x1, eSATA port x1)



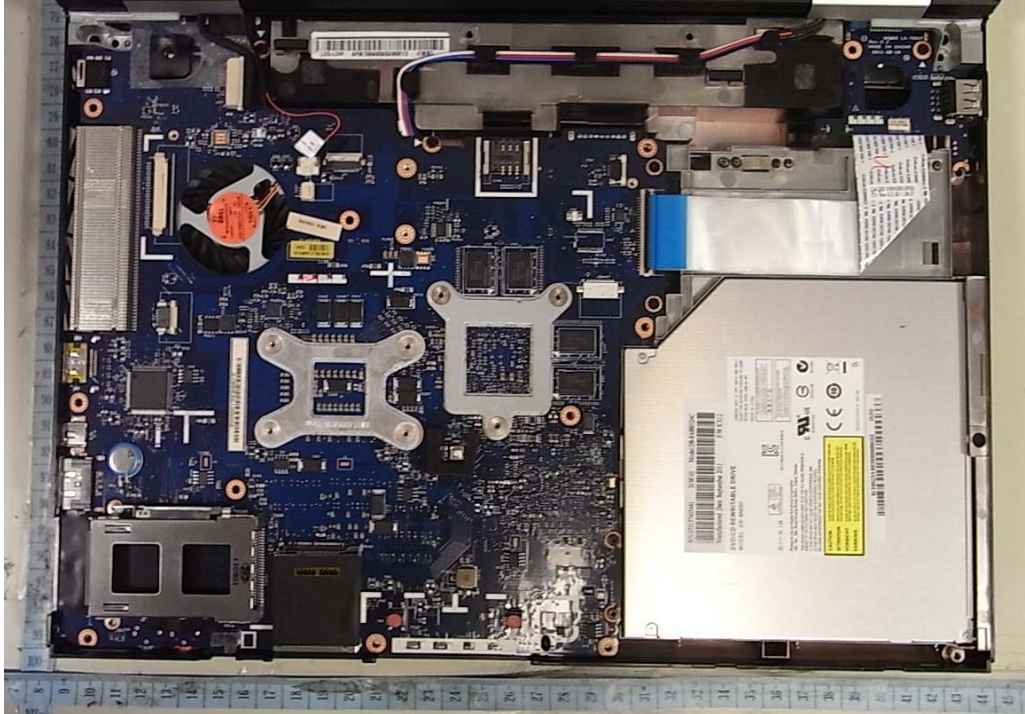
For model AQ00, AQ01, AQ02



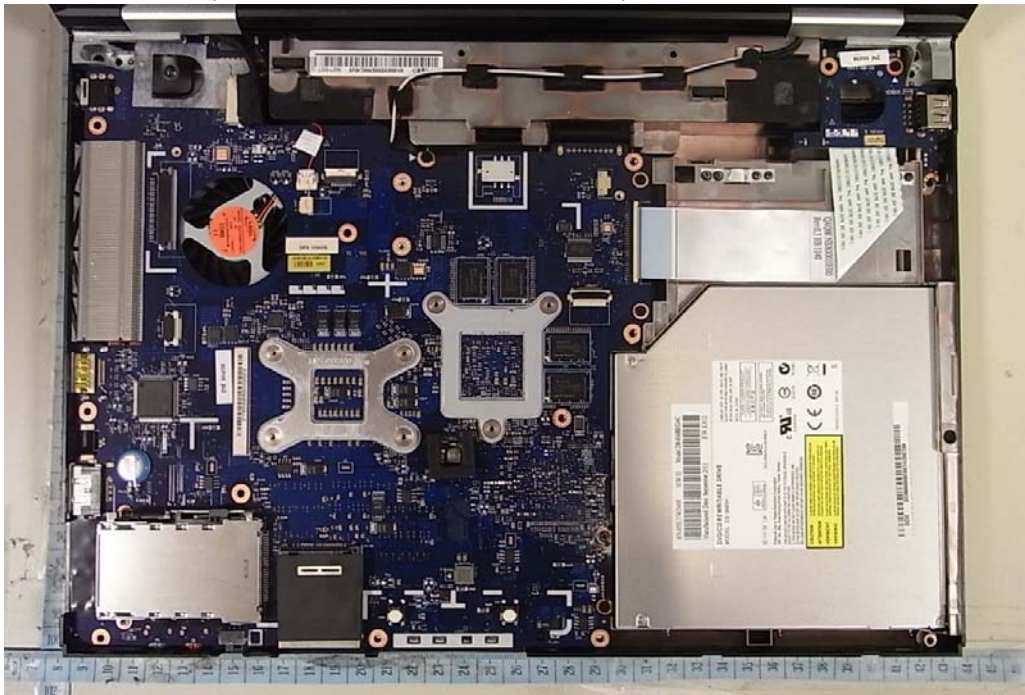
For model AQ00 (USB2.0 x4, eSATA x1, IEEE 1394 x1, RS232 x1)



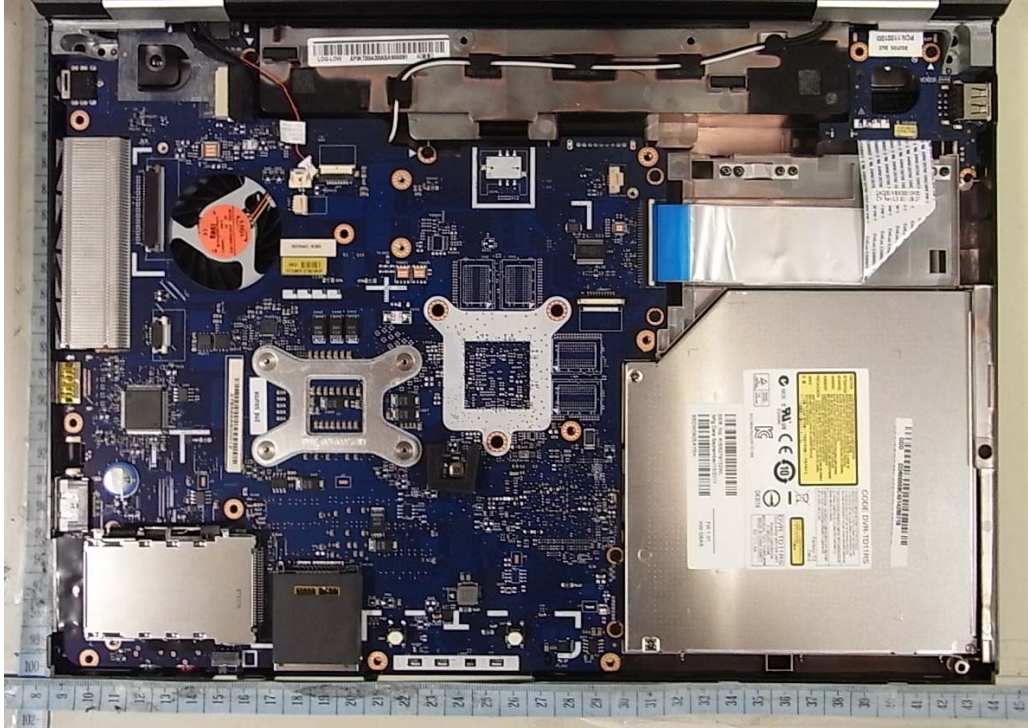
For model AQ01 (USB2.0 x4, eSATA x1, IEEE 1394 x1, RS232 x1)



For model AQ01 (USB2.0 x3, USB3.0 x1, eSATA x1)



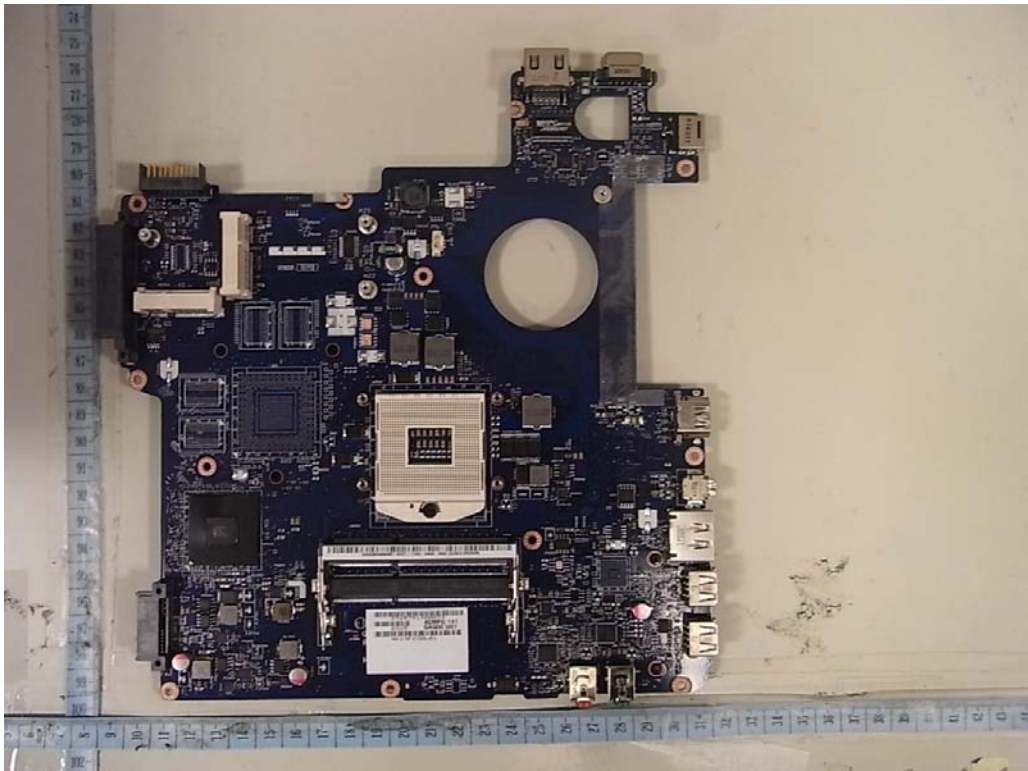
For model AQ02 (USB2.0 x3, USB3.0 x1, eSATA x1)



Main board for AQ00



Main board for AQ00



Main board for AQ01 (with optional IEEE 1394 and RS232)



Main board for AQ01 (with optional IEEE 1394 and RS232)



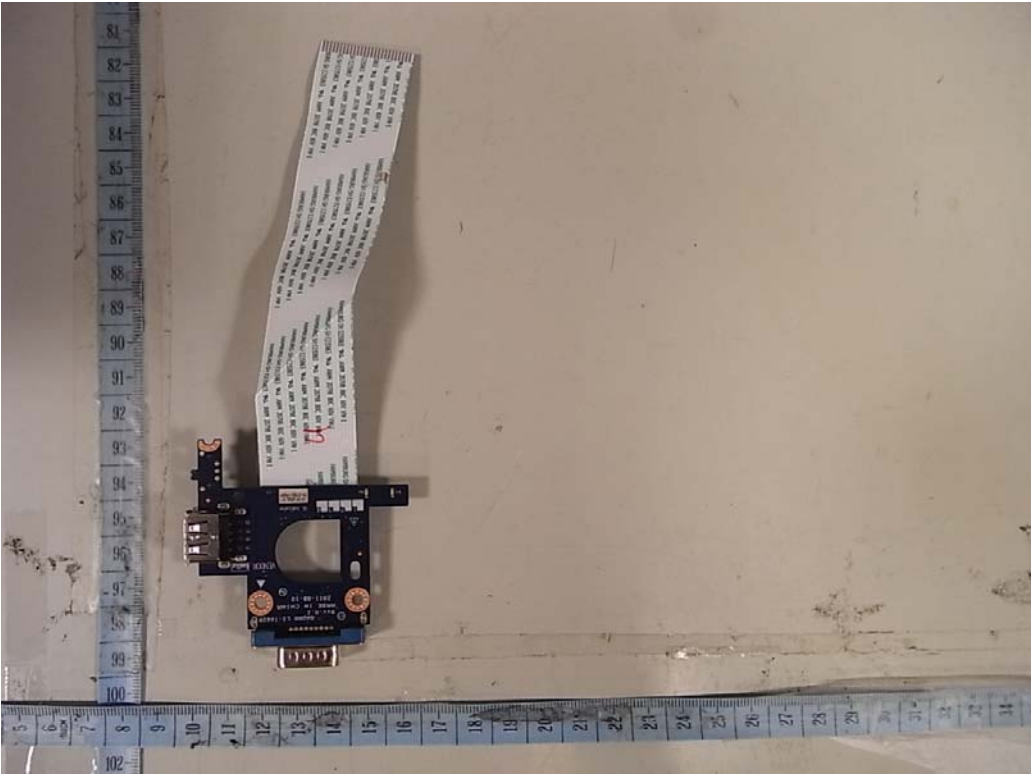
Photos

Report No. 188800

Sub-board



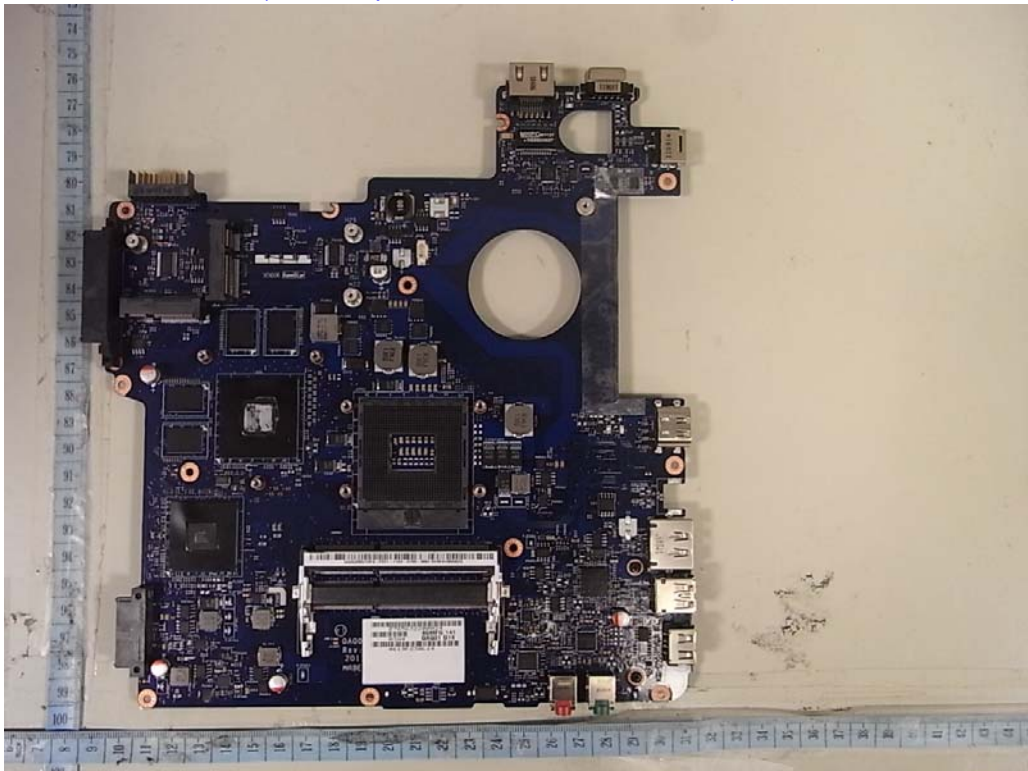
Sub-board



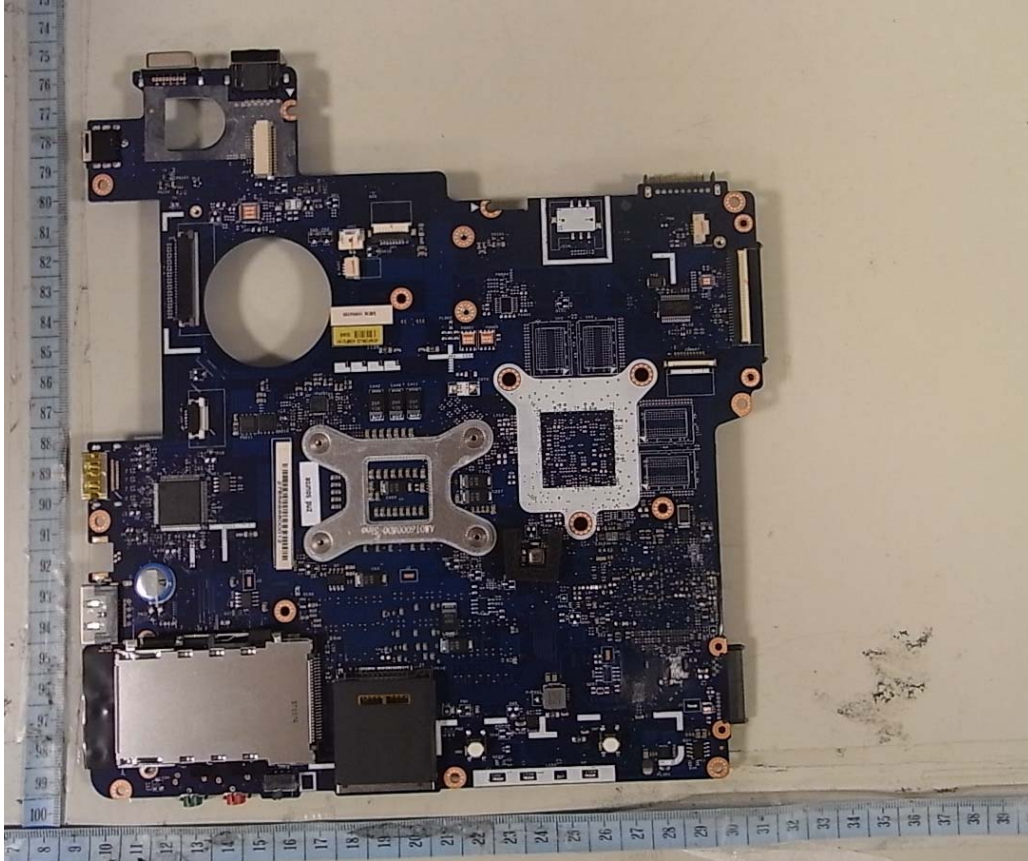
Main board for AQ01 (without optional IEEE 1394 and RS232)



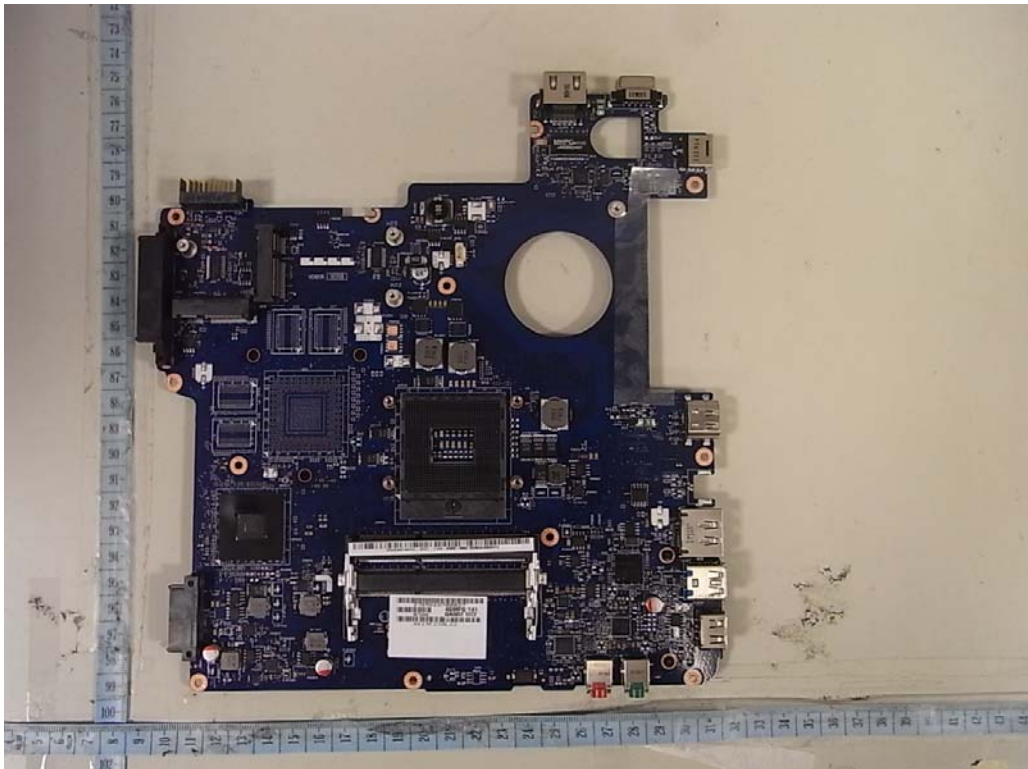
Main board for AQ01 (without optional IEEE 1394 and RS232)



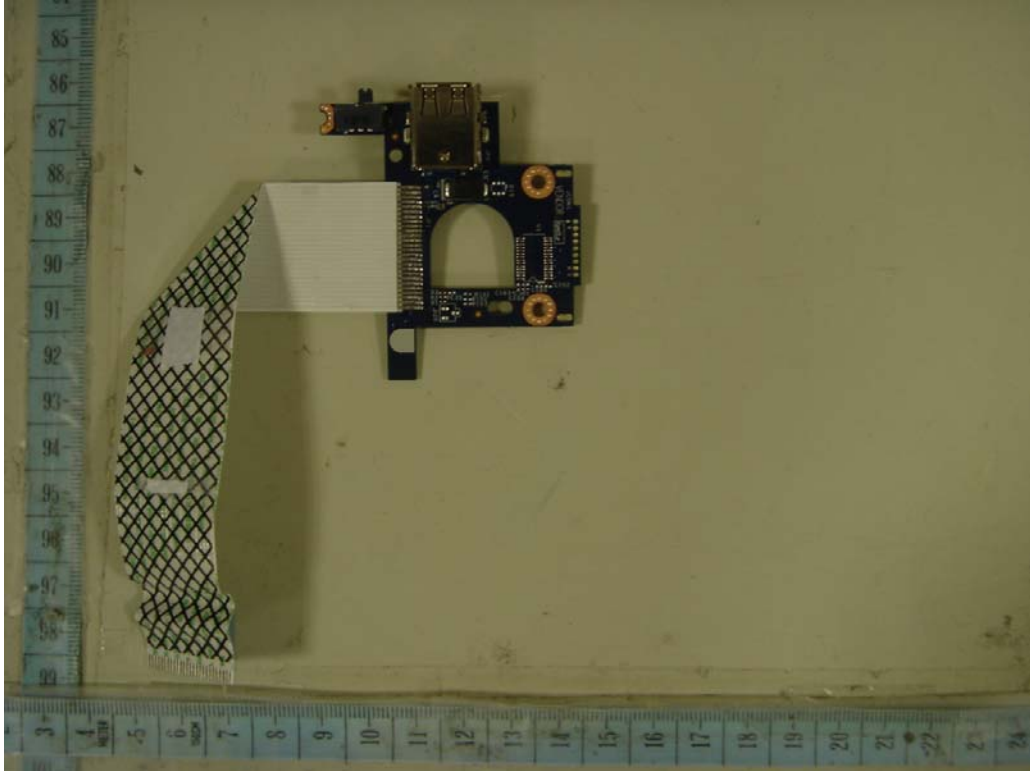
Main board for AQ02



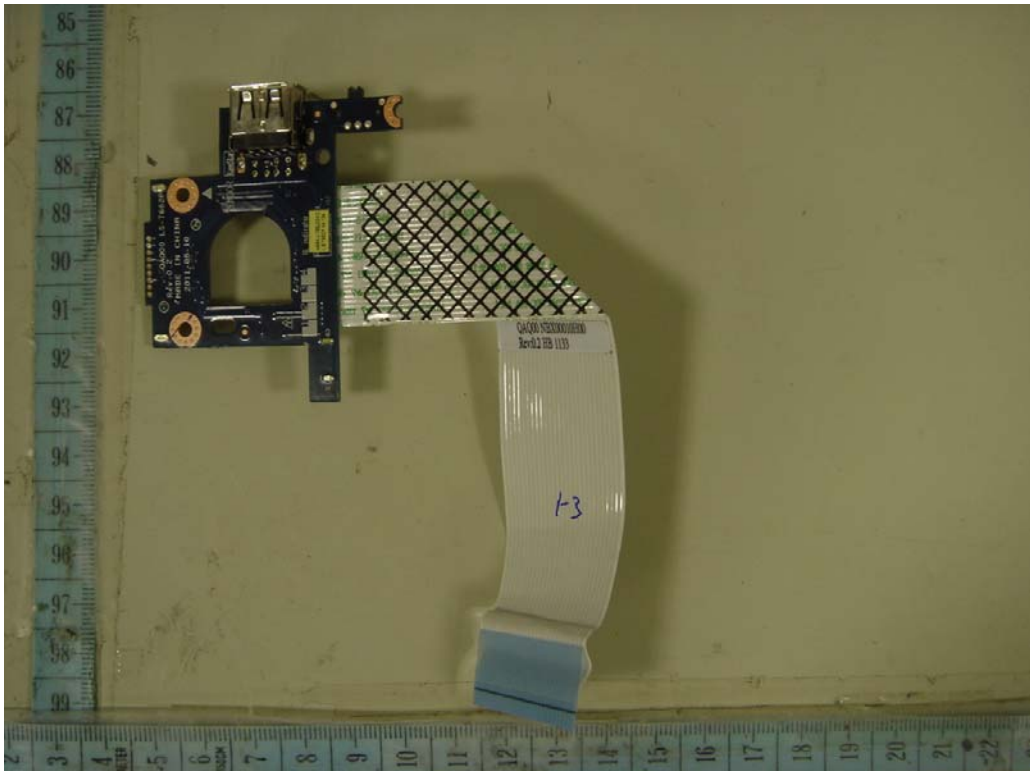
Main board for AQ02



Sub-board



Sub-board



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IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements</p>			
Differences according to: EN 60950-1:2006 + A11:2009			
Attachment Form No.: EU_GD_IEC60950_1A			
Attachment Originator: SGS Fimko Ltd			
Master Attachment: Date (2009-09)			
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EN 60950-1:2006/A11:2009 – CENELEC COMMON MODIFICATIONS

	IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN))				P
Clause	Requirement + Test			Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations				P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2				P

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>	Max. 85.6mV.	P
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Considered.	P
1.7.2.1	<p>Add the following NOTE:</p> <p>NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss</p>	Considered.	P
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>	Class III equipment.	N/A

IEC60950_1A - ATTACHMENT									
Clause	Requirement + Test	Result - Remark	Verdict						
	<p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>								
2.7.2	This subclause has been declared 'void'.	Class III equipment.	N/A						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Class III equipment.	N/A						
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 </td><td>(0,75) ^{b)} 1,0 </td></tr><tr><td>Over 10 up to and including 16 </td><td>(1,0) ^{c)} 1,5 </td></tr></table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ^{a)}	Over 6 up to and including 10	(0,75) ^{b)} 1,0	Over 10 up to and including 16	(1,0) ^{c)} 1,5	Class III equipment.	N/A
Up to and including 6	0,75 ^{a)}								
Over 6 up to and including 10	(0,75) ^{b)} 1,0								
Over 10 up to and including 16	(1,0) ^{c)} 1,5								
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table><tr><td>Over 10 up to and including 16 </td><td>1,5 to 2,5 </td><td>1,5 to 4 </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	Class III equipment.	N/A			
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6	<p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>	Not applicable.	N/A						

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IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	The unit does not emit X-ray radiation.	N/A
Bibliography	Additional EN standards.		—
ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		—
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Class III equipment.	N/A
1.2.13.14	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.	No such part.	N/A
1.5.7.1	In Finland , Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	Class III equipment.	N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Class III equipment.	N/A
1.5.9.4	In Finland , Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No such part.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p>	Class III equipment and connected to cable distribution system.	N/A
	<p>In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag" In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p>		N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet."</p> <p>Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."</p>		
1.7.5	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	Class III equipment.	N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits.	N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits.	N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits.	N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	Class III equipment.	N/A
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Class III equipment.	N/A



IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits.	N/A
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>	Class III equipment.	N/A
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	Class III equipment.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Class III equipment.	N/A
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Class III equipment.	N/A
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>	Class III equipment.	N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>	Class III equipment.	N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>	Class III equipment.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.	Class III equipment.	N/A
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	Class III equipment.	N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	Class III equipment.	N/A
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Class III equipment.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400. 	No TNV circuits.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	No TNV circuits.	N/A
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Not connected to cable distribution system.	N/A
7.3	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	Not connected to cable distribution system.	N/A
7.3	In Norway , for installation conditions see EN 60728-11:2005.	Not connected to cable distribution system.	N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN). A-DEVIATIONS (informative)		N/A
1.5.1	Sweden (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.	There are no components containing mercury in the equipment.	N/A
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no components containing mercury in the equipment.	N/A

IEC60950_1A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>Denmark (Heavy Current Regulations)</p> <p>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p style="text-align: center;">Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p style="text-align: center;"> eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:</p> <p>“For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”</p>	Class III equipment.	N/A
1.7.2.1	<p>Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2).</p> <p>If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market.</p> <p>Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.</p>	Must be considered when marketing in German.	N/A
1.7.5	<p>Denmark (Heavy Current Regulations)</p> <p>With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.</p>	Class III equipment.	N/A
1.7.13	<p>Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries)</p> <p>Annex 2.15 of SR 814.81 applies for batteries.</p>	Considered.	P
5.1.7.1	<p>Denmark (Heavy Current Regulations, Chapter 707, clause 707.4)</p> <p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.</p>	Class III equipment.	N/A

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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
National Differences for Korea			N/A
1.5.101	Addition Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305 and 8305).	Class III equipment.	N/A
8	Addition EMC The apparatus shall comply with the relevant CISPR standards.	Must be considered before marketed in Korea.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
National Differences for Canada			P
Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, Second Edition, which is based on IEC 60950-1, Second Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.			
SPECIAL NATIONAL CONDITIONS			
The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A	Class III equipment.	N/A
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC	No external interconnecting flexible cord or cable.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/NEC are required to have special construction features and identification markings.	No external interconnecting flexible cord or cable.	N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Class III equipment.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Class III equipment.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	Class III equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse used.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	Class III equipment.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Class III equipment.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Class III equipment.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Class III equipment.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Class III equipment.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.	Class III equipment.	N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Class III equipment.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Class III equipment.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	Class III equipment.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Class III equipment.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No AC motors in the equipment.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No switch acting as disconnect device.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery capable of supplying 750VA.	N/A
	Battery system: When power-off is activated:	No such battery system.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids within the equipment.	N/A
	Flammable liquid material: Flash point: Boiling point: Container material: Storage container size:		—
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	Considered. LEDs are diffusive type.	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 0.76 m ³ .	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	The equipment has no combustible material greater than 0.9m ² or single dimension greater than 1.8m.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	The equipment does not produce ionizing radiation.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict

OTHER DIFFERENCES

The following key national differences are based on requirements other than national regulatory requirements.

1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in Canada.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	No connect to DC power distribution system.	N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, SELV Circuits and accessible conductive parts comply with the North American limits of 2.2.3.	No TNV circuits.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) subjected to the additional limited short circuit test conditions specified, if required.	Class III equipment.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are provided with suitable enclosure to reduce the risk of injury due to the implosion of the CRT.	No CRTs in the equipment.	N/A
	Projected area of opening : Minor dimension of projected area :		—
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.	No mounting on racks and provided with slide/rails.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	No handles.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	Not connected to a telecommunication network.	N/A
	Ringing ports provided: Simulation provided to: Measured total touch current :		—
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.	Considered, see main test report.	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuits.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).	Not applicable.	N/A
Annex NAF Household/home office Document shredders			N/A
NAF1.7	Markings and Instructions	The equipment is not a shredders.	N/A
NAF 1.7.15	Symbols alerting the user to the following considerations are provided adjacent to the document feed opening. These symbols are explained in the instructions:		N/A
	Product is not intended for use by children (product is not a toy)		N/A
	Avoid touching the document feed opening with hands		N/A
	Avoid clothing touching the document feed opening		N/A
	Keep aerosol products away (applicable for product with brush motor only)		N/A
	The ⚠ (ISO 7000-0434) symbol to alert user to important operating, maintenance and/or servicing instructions and the explanation of above symbols		N/A
	Marking is permanent, comprehensible and easily discernible on the equipment.		N/A
NAF 2.8.3	Safety interlock can not be activated by articulated accessibility probe (NAF.1)		N/A
NAF 3.4	Isolation switch complying with 3.4.2 is provided to disconnect power to hazardous moving parts		N/A
	On/off marking is provided for two position switch...		N/A
	Off marking for multi-position switch		N/A
NAF 4.4	Protection against hazardous moving parts		N/A
	Accessibility probe (Fig NAF.1) is inserted without force into each opening and did not contact hazardous moving parts		N/A
	Operator accessible guards are removed and Accessibility wedge is inserted into each opening according without contacting mechanical hazards:		N/A

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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	Strip-cut (45N):		—
	Cross-cut (90N).....		—


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Clause	Requirement + Test	Result - Remark	Verdict
USA - Differences to IEC 60950-1:2005, Second Edition			P
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70	Considered.	P
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.	Considered.	P
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.	Class III equipment.	N/A
1.1.2	Equipment intended for outdoor use	Not outdoor use equipment.	N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.	Class III equipment.	N/A
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of UL component standards in Annex P.1.	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in USA.	P
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of UL component standards	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in USA.	P
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	No external interconnecting flexible.	N/A
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.	No external interconnecting flexible.	N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC	No external interconnecting flexible.	N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable	No external interconnecting flexible.	N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.	No such wire used.	N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863	No TNV circuits.	N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system subjected to special circuit classification requirements (e.g., TNV-2)	Class III equipment.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
1.6.1.2	Earthing of d.c. powered equipment provided	Class III equipment.	N/A
1.7	Lamp replacement information indicated on lampholder in operator access area	No lamp provided.	N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor	Class III equipment.	N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions	Class III equipment.	N/A
1.7.6	Fuse replacement marking for operator accessible fuses	Class III equipment.	N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor	Class III equipment.	N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.	Class III equipment.	N/A
1.7.7	Marking located adjacent to terminals and visible during wiring	No such terminal used.	N/A
2.1.1.1	Bare TNV conductive parts protected by a cover are exempt if instructions include directions for disconnection of TNV prior to removal of the cover	No TNV circuits.	N/A
2.3.1.b	Other telecommunication signaling systems than described in 2.3.1(b) are subject to M.4.	No TNV circuits.	N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the max. current limit through a resistor ≥ 2000 Ohm with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions	No TNV circuits.	N/A
2.3.1.b	Limits for measurements across 5000 Ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.	No TNV circuits.	N/A
2.3.2.1	For a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.	No TNV circuits.	N/A
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications if subject to special construction requirements and testing	No TNV circuits.	N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting according to the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable	No such component provided.	N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.	Class III equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	For Pluggable Equipment Type A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A	Class III equipment.	N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.	Class III equipment.	N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US	Class III equipment.	N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment	Class III equipment.	N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC	Class III equipment.	N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring	Class III equipment.	N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards	Class III equipment.	N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.	Class III equipment.	N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.	No multi-layer winding wire provided.	N/A
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent & short circuit protection	Considered.	P
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	Considered.	P
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC	Class III equipment.	N/A
3.2.1	Permitted use for flexible cords and plugs.	The equipment is not for connected to a D.C. mains supply.	N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.	The equipment is not for connected to a D.C. mains supply.	N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.	Class III equipment.	N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Equipment with one pole of the DC mains supply	The equipment is not for	N/A


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	connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing	connection to a DC. mains supply.	
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to the equipment earthing conductor	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the equipment earthing conductor	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.	The equipment is not for connection to a DC. mains supply.	N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC	Class III equipment.	N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 150 mm in length for connection of field installed wiring.	Class III equipment.	N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.	Class III equipment.	N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.	Class III equipment.	N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.	Class III equipment.	N/A
3.2.5	Conductors in power supply cords sized per NEC	Class III equipment.	N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.	Class III equipment.	N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.	Class III equipment.	N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.	Class III equipment.	N/A
3.2.9	Equipment solely for installation in Restricted Access Locations using low voltage d.c. systems	Equipment not intended for installation in RAL.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
	may not need provision for connecting and securing a field wiring system when wiring is protected from abuse.		
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.	Class III equipment.	N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than specified in 3.3 if wiring is reliably separated	Class III equipment.	N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means	Class III equipment.	N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.	Class III equipment.	N/A
3.3.4	Terminals accept US wire sizes (gauge)	Class III equipment.	N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.	Class III equipment.	N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor for the terminals used	Class III equipment.	N/A
3.3.6	Aluminum conductors not permitted for connection to terminal for equipment earthing conductor	Class III equipment.	N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.	Class III equipment.	N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.	No AC motors in the equipment.	N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".	No switch acting as disconnect device.	N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 minutes provided with battery disconnect means	No battery capable of supplying 750VA.	N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.	No CRTs in the equipment.	N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.	No high-pressure lamp provided.	N/A
4.2.11	For equipment mounted on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails	No mounting on racks and provided with slide/rails.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg	No handles.	N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310	Not intended to plug directly into a wall socket-outlet.	N/A
4.3.12	The max. quantity of flammable liquid stored in equipment per ANSI/NFPA 30 (Table NAE.6)	No flammable liquids within the equipment.	N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.	No flammable liquids within the equipment.	N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation	The equipment does not generate ionizing radiation.	N/A
4.3.13.5	Requirements contained in the applicable national codes apply to lasers (21 CFR 1040).	Considered. LEDs are diffusive type.	P
4.7	Automated information storage equipment intended to contain more than 0.76 m ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.	The equipment has no combustible area greater than 0.76 m ³ .	N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics (according to UL 2043). Equipment for installation in space used for environmental air, described in Sec. 300-22(c) of the NEC, provided with instructions indicating suitability for installation	Equipment not used in environmental air space.	N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.9 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.	The equipment has neither combustible area greater than 0.9m ² nor a single dimension greater than 1.8 m.	N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	Considered.	P
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.	Not connected to a telecommunication network.	N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.	Not connected to a telecommunication network.	N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	Considered.	P
5.3.7	Tests interrupted by opening of a component repeated two additional times.	No test interrupted by opening of component.	N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.	Not applicable.	N/A
6	Specialized instructions for telephones that may be	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	connected to a telecommunications network		
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.	No TNV circuits.	N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.	No TNV circuits.	N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.	No TNV circuits.	N/A
6.4	Additional requirements for equipment connected to a telecommunication network using cable subject to overvoltage from power line failures	No TNV circuits.	N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.	No TNV circuits.	N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.	No Cable distribution systems.	N/A
H	Ionizing radiation measurements made under single fault conditions according to 21 CFR 1020	The equipment does not produce ionizing radiation.	N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.	No applicable.	N/A
M.4	Special requirements for message waiting and similar telecommunications signals.	Not applicable.	N/A
NAC	Equipment for use with a generic secondary protector marked with suitable instructions.	Not applicable.	N/A
NAC	Equipment marked with suitable instructions if for use with a specific primary or secondary protector	Not applicable.	N/A
NAD	Acoustic pressure from an ear piece for short and long duration disturbances	Not applicable.	N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements	Not applicable.	N/A


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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
NAF	Household/Home Office Document Shredders		N/A
NAF.1.7	Markings and instructions alert the user to key safety considerations related to use of shredders, including not intended to be used by children, avoid touching document feed opening, avoid clothes and hair entanglement, and avoid aerosol products.	The equipment is not a shredders.	N/A
NAF.2.8.3	Safety interlock cannot be inadvertently activated by the articulated accessibility probe		N/A
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.		N/A
NAF.4.4	Hazardous moving parts are not accessible, as determined using the articulated accessibility probe and the accessibility probe/wedge		N/A



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Clause	Requirement + Test	Result - Remark	Verdict

National Differences for AUSTRALIA / NEW ZEALAND			P
ZZ.1 Introduction This Annex sets out variations between this Standard and IEC 60950-1:2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard.			
ZZ.2 Variations The variations are as follows:			
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' <i>insert</i> the following: POTENTIAL IGNITION SOURCE 1.2.12.201	Considered.	P
1.2.12.15	After the definition 1.2.12.15, <i>add</i> the following: 1.2.12.201 POTENTIAL IGNITION SOURCE: Possible fault which can start a fire if the open- circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS . NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202: This definition is from AS/NZS 60065:2003.	Considered.	P
1.5.1	<i>Add</i> the following to the end of first paragraph: 'or the relevant Australian/New Zealand Standard'.	Critical components are IEC certified.	P
1.5.2	<i>Add</i> the following to the end of first and third dash items: 'or the relevant Australian/New Zealand Standard'.	Critical components are IEC certified.	P
2.1	<i>Delete</i> the Note	Considered.	P
3.2.3	<i>Delete</i> Note 2	The equipment is not intended for permanent connection to the mains.	N/A



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Clause	Requirement + Test	Result - Remark	Verdict																	
3.2.5.1	<p><i>Modify</i> Table 3B as follows:</p> <p><i>Delete</i> the first four rows and replace with</p> <table><tr><th rowspan="2">RATED CURRENT OF EQUIPMENT A</th><th colspan="2">Minimum conductor sizes</th></tr><tr><th>Nominal cross-sectional area mm²</th><th>AWG or kcmil [cross- sectional area in mm²] see note 2</th></tr><tr><td>Over 0.2 up to and including 3</td><td>0,5 ¹⁾</td><td>18 [0,8]</td></tr><tr><td>Over 3 up to and including 7.5</td><td>0,75</td><td>16 [1,3]</td></tr><tr><td>Over 7.5 up to and including 10</td><td>(0,75)²⁾</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0)³⁾</td><td>14 [2]</td></tr></table> <p><i>Replace</i> footnote 1) with the following:</p> <p>¹⁾ This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191).</p> <p><i>Delete</i> Note 1.</p>	RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes		Nominal cross-sectional area mm ²	AWG or kcmil [cross- sectional area in mm ²] see note 2	Over 0.2 up to and including 3	0,5 ¹⁾	18 [0,8]	Over 3 up to and including 7.5	0,75	16 [1,3]	Over 7.5 up to and including 10	(0,75) ²⁾	16 [1,3]	Over 10 up to and including 16	(1,0) ³⁾	14 [2]	Class III equipment.	N/A
RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes																			
	Nominal cross-sectional area mm ²	AWG or kcmil [cross- sectional area in mm ²] see note 2																		
Over 0.2 up to and including 3	0,5 ¹⁾	18 [0,8]																		
Over 3 up to and including 7.5	0,75	16 [1,3]																		
Over 7.5 up to and including 10	(0,75) ²⁾	16 [1,3]																		
Over 10 up to and including 16	(1,0) ³⁾	14 [2]																		
4.3.6	<p><i>Replace</i> paragraph three with:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>	Not intended to plug directly into a wall socket-outlet.	N/A																	
4.3.13.5	<p><i>Add</i> the following to the end of first paragraph:</p> <p>‘or AS/NZS 2211.1’.</p>	Considered.	P																	
4.7	<p><i>Add</i> the following paragraph:</p> <p>For alternative tests refer to Clause 4.7.201.</p>	Refer to below.	P																	


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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>Add the following after Clause 4.7.3.6:</p> <p>4.7.201 Resistance to fire – Alternative tests</p> <p>4.7.201.1 General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following:</p> <p>a) Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NZS 4695.707 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1750mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category FV-1, or better, according to AS/NZS 4695.707. <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p> <p>4.7.201.2 Testing of non-metallic materials</p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p>	All materials have suitable flame class, no testing required.	P



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Clause	Requirement + Test	Result - Remark	Verdict														
4.7.201	<p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.3 Testing of insulating materials</p> <p>Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C</p> <p>The test shall also be carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections.</p> <p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:</p> <table><tr><th>Clause of AS/NZS 4695.2.2</th><th>Change</th></tr><tr><td>5 Severities</td><td><i>Replace with:</i> The duration of application of the test flame shall be 30 s ±1 s.</td></tr><tr><td>8 Test procedure</td><td></td></tr><tr><td>8.2</td><td><i>Replace the first sentence with:</i> The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.</td></tr><tr><td>8.4</td><td>The first paragraph does not apply. <i>Addition:</i> If possible, the flame shall be applied at least 10 mm from a corner.</td></tr><tr><td>8.5</td><td><i>Replace with:</i> The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.</td></tr><tr><td>10 Evaluation of test results</td><td><i>Replace with:</i> The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td></tr></table>	Clause of AS/NZS 4695.2.2	Change	5 Severities	<i>Replace with:</i> The duration of application of the test flame shall be 30 s ±1 s.	8 Test procedure		8.2	<i>Replace the first sentence with:</i> The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.	8.4	The first paragraph does not apply. <i>Addition:</i> If possible, the flame shall be applied at least 10 mm from a corner.	8.5	<i>Replace with:</i> The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.	10 Evaluation of test results	<i>Replace with:</i> The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	All materials have suitable flame class, no testing required.	P
Clause of AS/NZS 4695.2.2	Change																
5 Severities	<i>Replace with:</i> The duration of application of the test flame shall be 30 s ±1 s.																
8 Test procedure																	
8.2	<i>Replace the first sentence with:</i> The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.																
8.4	The first paragraph does not apply. <i>Addition:</i> If possible, the flame shall be applied at least 10 mm from a corner.																
8.5	<i>Replace with:</i> The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.																
10 Evaluation of test results	<i>Replace with:</i> The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.																


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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.4 Testing in the event of non-extinguishing material</p> <p>If the parts, other than enclosures, do not withstand the glow-wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>	All materials have suitable flame class, no testing required.	P


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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>4.7.201.5 Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.</p> <p>The test is not carried out if the –</p> <ul style="list-style-type: none"> - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category FV-0 according to AS/NZS 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <p>Compliance shall be determined using the smallest thickness of the material.</p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power from more than 2 min when the circuit supplied is disconnected.</p>	All materials have suitable flame class, no testing required.	P
6.2.2	<p>Add the symbol [NZ] in the right hand margin beside the first paragraph.</p> <p>Add the following after the first paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.</p> <p>Delete the Note.</p>	No TNV circuits.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	<p><i>Add</i> the symbol [NZ] in the right hand margin beside the first paragraph including Note 1.</p> <p><i>Delete</i> the Note 2.</p> <p><i>Add</i> the following after the first paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, U_c, is:</p> <ul style="list-style-type: none"> - for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and - for 6.2.1 b) and 6.2.1 c): 1.5 kV. <p>NOTE 201: The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 202: The 2.5 kV for 6.2.1 a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>	No TNV circuits.	N/A
6.2.2.2	<p><i>Add</i> the symbol [NZ] in the right hand margin beside the second paragraph.</p> <p><i>Delete</i> the Note.</p> <p><i>Add</i> the following after the second paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), the a.c. test voltage is:</p> <ul style="list-style-type: none"> - for 6.2.1 a): 3 kV; and - for 6.2.1 b) and 6.2.1 c): 1.5 kV. <p>NOTE 201: Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 202: The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>	No TNV circuits.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict
Annex P	<p>Add the following Normative References to Annex P:</p> <p>IEC 60065, <i>Audio, Video and similar electronic apparatus – Safety requirements</i></p> <p>AS/NZS 3191, <i>Approval and test specification – Electric flexible cords</i></p> <p>AS/NZS 3112, <i>Approval and test specification – Plugs and socket-outlets</i></p> <p>AS/NZS 4695.707, <i>Fire hazard testing of electrotechnical products – Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source</i></p>	Considered.	P
Index	<p>Between the entries 'polyimide insulating material' and 'powder' insert the following:</p> <p>POTENTIAL IGNITION SOURCE 1.12.201, 4.7.201.3, 4.7.201.5</p>	Considered.	P


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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT: SINGAPORE DIFFERENCES to IEC 60950-1 (ed.1)

No	Item	Requirement	Result - Remark	Verdict
<p>The following is the national differences in accordance with safety authority website www.safety.org.sg/ , ref. Singapore Consumer Protection (Safety Requirements) - Information booklet - chapter 7 (page 23 - 26). Based on information by Singapore NCB – PSB Corp.</p>				
<h4>7 SAFETY AUTHORITY'S REQUIREMENTS</h4> <p>The Safety Authority monitors the safety of the controlled goods sold in Singapore by investigating all complaints, incidents and accidents reported to the authority. Experiences gained are translated into the Safety Authority's Requirements. These requirements are to be fulfilled in addition to the applicable safety standards.</p>				
<p align="center">Applicable to all electrical products</p>				
2	All appliances	All appliances must be tested to 230 VAC.	Class III equipment.	N/A
3	Voltage selector (voltage mis-match test)	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	Class III equipment.	N/A
4	Tropical condition test	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Class III equipment.	N/A
5	Class I appliances (3-pin mains plug)	All Class I appliances must be fitted with 3-pin mains plugs complied with SS 145/SS 472 that are registered with the Safety Authority.	Class III equipment.	N/A
6	Class II appliances (mains plug)	a) All Class II appliances must be fitted with 2-pin mains plug (Appendix W) complied with IEC 83: 1975 (Standard C5, Version II) or EN 50075: 1991. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are complied with SS 145 and registered with the Safety Authority.	Class III equipment.	N/A
7	Appliances rated ≥ 3 kW or connected to fixed wiring	Electric appliance ≥ 3 kW must be connected to fixed wiring. All connection to fixed wiring must be in accordance with Code of Practice CP5.	Class III equipment.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict

No	Item	Requirement	Result - Remark	Verdict
8	Detachable power cord set (consists of mains plug, mains cord and appliance connector)	Detachable power cord set must be listed in the test report critical component list.	Class III equipment.	N/A
9	Circuit diagrams	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950.	Must be considered when marketing in Singapore.	—
10	Circuit diagrams of electronic modules in electrical appliances	Circuit diagrams of the electronic modules in the electrical appliances must be provided.	Must be considered when marketing in Singapore.	—
11	Controlled goods likely to be treated as toy by children	Controlled goods, having an enclosure, which is shaped and decorated so that it is likely to be treated as a toy by children, shall not be accepted for certification and registration.	The shape and function are not considered as toy.	N/A
Applicable to AC adaptor				
13	3-pin AC adaptor	Test report showing that the 3-pin complied with sub-clauses 12.1 & 12.3 of SS 246 must be submitted.	Class III equipment.	N/A
14	2-pin AC adaptor	The 2-pin (Appendix W) shall comply with IEC 83: 1975 (Standard C5, Version II) or EN 50075.	Class III equipment.	N/A
15	Detachable power supply cord set not supplied by Registered Supplier	Registered Supplier who is not supplying the detachable power supply cord set together with the AC Adaptor must provide written instruction to its customer on the type of approved detachable power cord set to use.	Class III equipment.	N/A


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Clause	Requirement + Test	Result - Remark	Verdict

Applicable to computer products				
16	CD/DVD ROM (used in personal computer)	Test certificate showing that CD/DVD ROM has complied with IEC 825 must be provided.	Considered.	P
17	Modem Card (used in personal computer)	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	No modem card.	N/A
Applicable to plasma/LCD display monitor				
35	Plasma/LCD display monitor with TV tuner	Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.	No TV tuner.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

National Differences for JAPAN	
Differences according to.....: J60950-1(H22)	

National Differences - Japan			
1.2.4.1	<p>Add the following new NOTE.</p> <p>NOTE Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when a 2-pin adaptor with an earthing lead wire or a cord set having a 2-pin plug with an earthing lead wire is provided or recommended.</p>	Class III equipment.	N/A
1.2.4.3A	<p>Add the following new clause.</p> <p>1.2.4.3A CLASS 0I EQUIPMENT</p> <p>Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by:</p> <ul style="list-style-type: none"> - using BASIC INSULATION, and - providing externally an earth terminal or a lead wire for earthing in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. <p>NOTE Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation. circuit.</p>	Class III equipment.	N/A
1.3.2	<p>Add the following notes after the first paragraph:</p> <p>NOTE 1 Transportable or similar equipment that is relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p> <p>NOTE 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p>	Class III equipment.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Replace the first paragraph with the following:</p> <p>Where safety is involved, components shall comply either with the requirements of this standard or with the safety aspects of the relevant JIS component standard or IEC component standards in case there is no applicable JIS component standard is available. However, in case a component that falls within the scope of the METI Ministerial ordinance (No. 85:1962) is properly used in accordance with its marked ratings, the requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set matching with an appliance inlet specified in the standard sheets of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1.</p> <p>Replace NOTE 1 with the following:</p> <p>NOTE 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.</p>	Considered.	P

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.2	<p>Replace the first sentence in the first dashed paragraph with the following:</p> <ul style="list-style-type: none"> - a component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating. <p>Add a NOTE after the first dashed paragraph as follows:</p> <p>NOTE 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A.</p> <p>Replace the first sentence in the third dashed paragraph as follows:</p> <ul style="list-style-type: none"> - where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment. 	Considered.	P
1.5.6	In this sub-clause, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	No such part.	N/A
1.5.7.2	In this sub-clause, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	No such part.	N/A
1.5.8	In the first paragraph, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	No such part.	N/A
1.7.1	<p>Replace the fifth dashed paragraph with the following:</p> <ul style="list-style-type: none"> - manufacturer's or responsible company's name or trade-mark or identification mark; 	Must be considered when enter to Japan market.	N/A
1.7.5	In the second paragraph, add "or JIS C 8303:2007" after the reference number, IEC/TR 60083:1997".	No such part.	N/A


IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5A	<p>Add the following new clause after 1.7.5</p> <p>1.7.5A Appliance Couplers</p> <p>If an appliance coupler according to IEC 60320-1, C.14(rated current: 10 A) is used in equipment whose rated voltage is less than 125 V and the rated current is over 10 A, the following instruction or equivalent shall be described in the user instruction.</p> <p>“ Use only designated cord set attached in this equipment”</p>	Class III equipment.	N/A
1.7.12	<p>Replace first sentence with the following:</p> <p>Instructions and equipment marking related to safety shall be in Japanese.</p>	Must be considered when enter to Japan market.	N/A
1.7.17A	<p>Add the following new clause after 1.7.17</p> <p>1.7.17A Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body:</p> <p>必ず接地接続を行って下さい “Provide an earthing connection”</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>接地接続は必ず、電源プラグを電源につなぐ前に行って下さい。又、接地接続を外す場合は、必ず電源プラグを電源から切り離してから行って下さい。 “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p>	Class III equipment.	N/A
2.1.1.1	In item b) of this sub-clause, replace “IEC 60083” with “JIS C 8303:2007 or Article 1 of the Ministerial Ordinance (No. 85:1962)”	Considered.	P
2.6.3.2	<p>Add the following after the first paragraph.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>	Class III equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	<p>Replace the first paragraph with the following.</p> <p>Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.</p>	Class III equipment.	N/A
2.6.5.4	<p>Replace the first sentence with the following.</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>	Class III equipment.	N/A
2.6.5.8A	<p>Add the following new clause after 2.6.5.8</p> <p>2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150 V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or a lead wire for earthing in the external location where easily visible.</p>	Class III equipment.	N/A
2.10.3.1	In this sub-clause, replace IEC 60664-1 with JIS C 0664:2003.	Considered.	P
2.10.3.2	In the second paragraph, replace IEC 60664-1 with JIS C 0664:2003.	Considered.	P
3.2.3	<p>Add the following after Table 3A:</p> <p>Table 3A applies when cables complying with JIS C 3662 or JIS C 3663 are used. In case of other cables, the cable entries shall be so designed that a conduit suitable for the cable used can be fitted.</p>	Class III equipment.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	<p>Add the following to the last of first dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance (No. 85:1962) on stipulating technical requirements for the Electrical Appliance.</p> <p>Add the following to the last of second dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance (No. 85:1962) on stipulating technical requirements for the Electrical Appliance.</p> <p>Delete 1) in Table 3B.</p>	Class III equipment.	N/A
3.3.4	<p>Add the following note to Table 3D:</p> <p>NOTE For cables other than those complying with JIS C 3662 or JIS C 3663, terminals shall be suitable for the size of the intended cables.</p>	Class III equipment.	N/A
3.3.7	<p>Add the following after the first sentence:</p> <p>This requirement is not applicable to the external earthing terminal of Class 0I equipment.</p>	Class III equipment.	N/A
4.3.4	<p>Add the following after the first sentence:</p> <p>This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.</p>	Considered	P
4.3.13.5	<p>Replace the first paragraph with the following:</p> <p>Except as permitted below, equipment shall be classified and labelled according to JIS C 6802:2005, and JIS C 6803:2006 or IEC 60825-2:2000, as applicable.</p> <p>Replace IEC 60825-1 in the second and the last paragraph with JIS C 6802:2005.</p>	Replaced.	P

IEC 60950-1:2001																															
Clause	Requirement + Test	Result - Remark	Verdict																												
4.5	<p>Add the following NOTE to Table 4B, 3):</p> <p>NOTE: In case no data for the material is available, Appendix 4, 4. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances (Commerce and Distribution Policy Group No. 3:2008/06/19) may apply.</p>	Considered.	P																												
5.1.3	<p>Add a note after the first paragraph as follows:</p> <p>NOTE Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, the test is conducted using the test circuit from IEC 60990, figure 13.</p>	Class III equipment.	N/A																												
5.1.6	<p>Replace Table 5A as follows:</p> <table border="1"> <thead> <tr> <th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. ¹⁾</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr> </thead> <tbody> <tr> <td>All equipment</td><td>Accessible parts and circuits not connected to protective earth</td><td>0,25</td><td>-</td></tr> <tr> <td>HAND-HELD</td><td rowspan="4">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr> <tr> <td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT</td><td>3,5</td><td>-</td></tr> <tr> <td>STATIONARY, PLUGGABLE TYPE A</td><td>3,5</td><td>-</td></tr> <tr> <td>All other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7</td><td>3,5 -</td><td>- 5 % of input current</td></tr> <tr> <td>HAND-HELD</td><td rowspan="2">Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT</td><td>0,5</td><td>-</td></tr> <tr> <td>Others</td><td>1,0</td><td>-</td></tr> </tbody> </table> <p>¹⁾ If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.</p>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT	All equipment	Accessible parts and circuits not connected to protective earth	0,25	-	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0,75	-	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT	3,5	-	STATIONARY, PLUGGABLE TYPE A	3,5	-	All other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7	3,5 -	- 5 % of input current	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-	Others	1,0	-	—	
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT																												
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HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-																												
Others		1,0	-																												
6	Replace IEC 60664-1 in NOTE 4 with JIS C 0664.	No such part.	N/A																												
7	Replace IEC 60664-1 in NOTE 3 with JIS C 0664:2003.	No such part.	N/A																												

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	<p>Add the following after the paragraph:</p> <p>However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to a CABLE DISTRIBUTION SYSTEM if all of the following apply:</p> <ul style="list-style-type: none"> - the circuit under consideration is a TNV-1 CIRCUIT; and - the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and - the screen of the coaxial cable is intended to be connected to earth in the building installation. 	No such part.	N/A
W.1	<p>Replace the second and the third sentence in the first paragraph with the following:</p> <p>This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.</p>	Class III equipment.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	<p>Add a new annex JA with the following contents.</p> <p style="text-align: center;">Annex JA (normative)</p> <p style="text-align: center;">Document shredding machines</p> <p>Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.</p> <p>JA.1 Markings and instructions</p> <p>The symbol</p> <p> (JIS S 0101:2000, 6.2.4) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible;</p> <ul style="list-style-type: none"> - that use by an infants/children may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothing can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; - in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas. <p>JA.2 Inadvertent reactivation</p> <p>Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard.</p> <p>Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1</p> <p>JA.3 Disconnection from the mains supply</p> <p>Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p>	The equipment is not document shredding machines.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	<p>If two-position switch, the positions for "ON" and "OFF" shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for "OFF" shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection</p> <p>JA.4 Protection against hazardous moving parts Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements.</p> <p>Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p>	The equipment is not document shredding machines.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

Annex JA

N/A

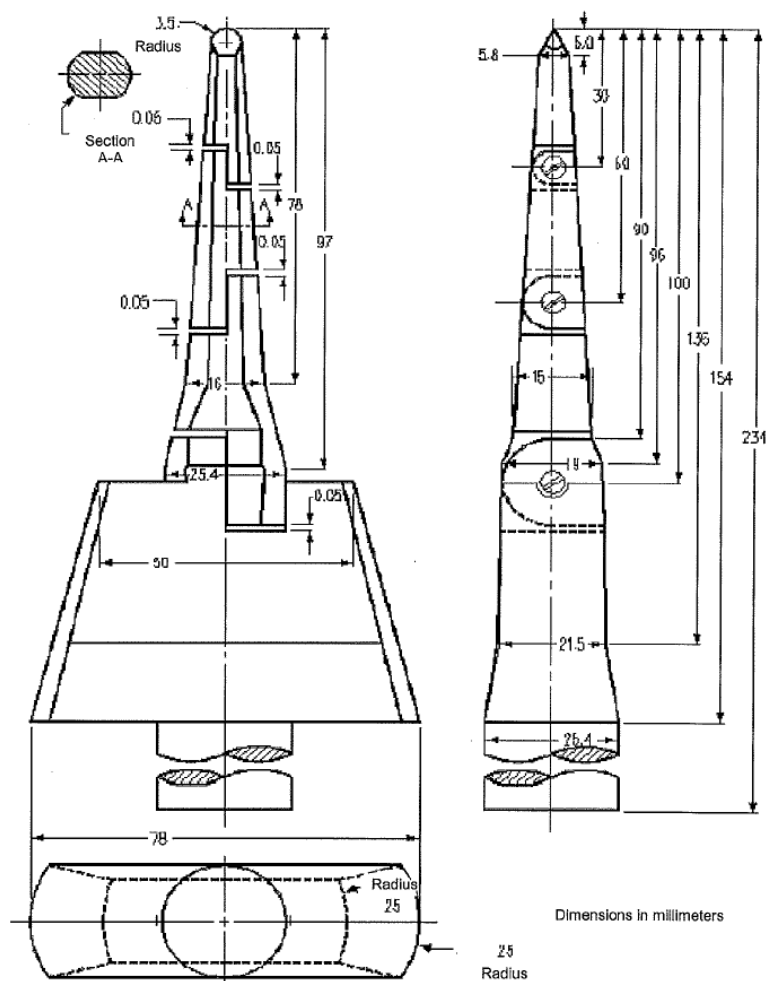
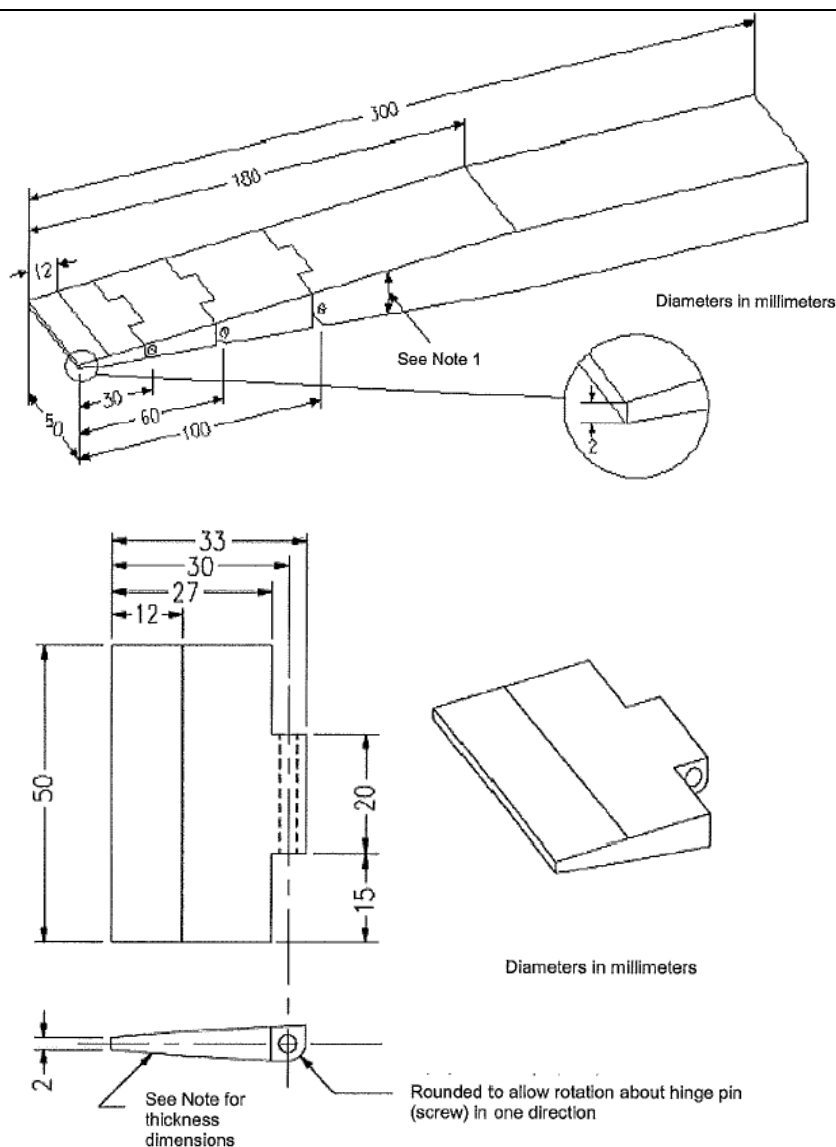


Figure JA.1 Test finger

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

Annex JA

N/A



Details of the tip of wedge

Distance from the tip (mm)	Thickness of probe (mm)
0	2
12	4
180	24

NOTE 1 The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.

NOTE2 The allowable dimensional tolerance of the probe is +/- 0.127 mm.

Figure JA.2 Wedge-probe